

=> d his nofil

(FILE 'HOME' ENTERED AT 18:33:21 ON 26 SEP 2006)

FILE 'REGISTRY' ENTERED AT 18:33:29 ON 26 SEP 2006

L1 STR  
L2 0 SEA SSS SAM L1  
L3 2 SEA SSS FUL L1  
D SCA

FILE 'HCAPLUS' ENTERED AT 18:35:59 ON 26 SEP 2006

L4 47 SEA ABB=ON PLU=ON L3  
L5 1 SEA ABB=ON PLU=ON US200!-515981/APPS  
L\*\*\* DEL 1 S L5 AND L4  
SEL RN L5

FILE 'REGISTRY' ENTERED AT 18:36:46 ON 26 SEP 2006

L6 1 SEA ABB=ON PLU=ON 157115-85-0/BI

FILE 'HCAPLUS' ENTERED AT 18:36:50 ON 26 SEP 2006

L7 1 SEA ABB=ON PLU=ON L5 AND L6

FILE 'BEILSTEIN' ENTERED AT 18:37:18 ON 26 SEP 2006

L8 0 SEA SSS SAM L1  
L9 2 SEA SSS FUL L1  
L10 2 SEA ABB=ON PLU=ON L9 NOT RN/FA

FILE 'MARPAT' ENTERED AT 18:37:42 ON 26 SEP 2006

L11 2 SEA SSS SAM L1  
L12 11 SEA SSS FUL L1  
L13 10 SEA ABB=ON PLU=ON L12/COM  
L14 6 SEA ABB=ON PLU=ON L13 NOT L4

FILE 'HCAPLUS, MEDLINE, EMBASE, BIOSIS' ENTERED AT 18:39:04 ON 26 SEP 2006  
E PEARLMAN R/AU

L15 571 SEA ABB=ON PLU=ON ("PEARLMAN R"/AU OR "PEARLMAN R A"/AU OR  
"PEARLMAN R B"/AU OR "PEARLMAN R C"/AU OR "PEARLMAN R E"/AU OR  
"PEARLMAN R ELLEN"/AU OR "PEARLMAN R J"/AU OR "PEARLMAN R  
L"/AU OR "PEARLMAN R S"/AU OR "PEARLMAN RODNEY"/AU)  
D IALL L7

L16 13 SEA ABB=ON PLU=ON L15 AND (MCI OR COGNI? OR ALZHEIM?)

L17 8 DUP REM L16 (5 DUPLICATES REMOVED)  
ANSWERS '1-4' FROM FILE HCAPLUS  
ANSWERS '5-6' FROM FILE MEDLINE  
ANSWERS '7-8' FROM FILE BIOSIS

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 18:41:20 ON 26 SEP 2006

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September 26, 2006

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FILE COVERS 1907 - 26 Sep 2006 VOL 145 ISS 14

FILE LAST UPDATED: 25 Sep 2006 (20060925/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

## INSTANT APPLICATION

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L5 1 SEA FILE=HCAPLUS ABB=ON PLU=ON US200!-515981/APPS

L6 1 SEA FILE=REGISTRY ABB=ON PLU=ON 157115-85-0/BI

L7 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L5 AND L6

=&gt; d 17 iall hitstr

L7 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:971842 HCAPLUS Full-text

DOCUMENT NUMBER: 140:13074

ENTRY DATE: Entered STN: 14 Dec 2003

TITLE: Therapeutic methods for treatment of mild cognitive impairment and progression to Alzheimer's disease

INVENTOR(S): Pearlman, Rodney

PATENT ASSIGNEE(S): Saegis Pharmaceuticals, Inc., USA

SOURCE: PCT Int. Appl., 16 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

INT. PATENT CLASSIF.:

MAIN: A61K

CLASSIFICATION: 1-11 (Pharmacology)

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003101391	A2	20031211	WO 2003-US17161	20030529
WO 2003101391	A3	20040304		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2003231937	A1	20031219	AU 2003-231937	20030529
US 2005233976	A1	20051020	US 2005-515981	20050615 <--
PRIORITY APPLN. INFO.:			US 2002-384754P	P 20020529
			WO 2003-US17161	W 20030529

PATENT CLASSIFICATION CODES:

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

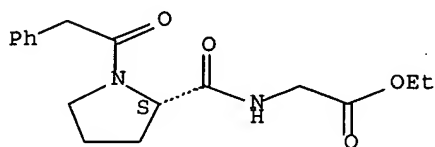
WO 2003101391 ICM A61K  
 IPCI A61K [ICM,7]  
 IPCR C07D0207-00 [I,C\*]; C07D0207-16 [I,A]  
 ECLA C07D207/16  
 AU 2003231937 IPCI A61K0038-00 [ICM,7]  
 IPCR C07D0207-00 [I,C\*]; C07D0207-16 [I,A]  
 US 2005233976 IPCI A61K0038-04 [ICM,7]; C07K0005-04 [ICS,7]; C07K0005-00 [ICS,7,C\*]  
 IPCR A61K0038-04 [I,A]; A61K0038-04 [I,C\*]; C07K0005-00 [I,C\*]; C07K0005-04 [I,A]  
 NCL 514/019.000; 548/537.000  
 OTHER SOURCE(S): MARPAT 140:13074

## ABSTRACT:

The invention provides methods for treating a symptom of mild cognitive impairment (MCI) as well as methods for slowing the progression from MCI to Alzheimer's disease (AD).

SUPPL. TERM: mild cognitive impairment Alzheimer disease therapy  
 INDEX TERM: Cognitive disorders  
 (mild cognitive impairment; therapeutic methods for treatment of mild cognitive impairment and progression to Alzheimer's disease)  
 INDEX TERM: Human  
 (therapeutic methods for treatment of mild cognitive impairment and progression to Alzheimer's disease)  
 INDEX TERM: 157115-85-0  
 ROLE: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (therapeutic methods for treatment of mild cognitive impairment and progression to Alzheimer's disease)  
 IT 157115-85-0  
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (therapeutic methods for treatment of mild cognitive impairment and progression to Alzheimer's disease)  
 RN 157115-85-0 HCAPLUS  
 CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

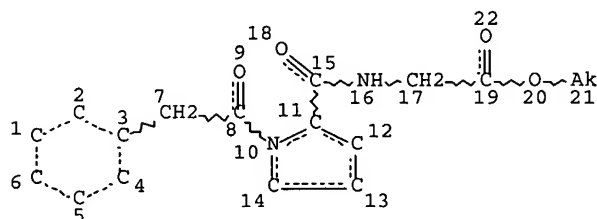
Absolute stereochemistry.



## PRIOR ART SEARCH - CHEMICAL ABSTRACTS

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L1 STR



## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 22

## STEREO ATTRIBUTES: NONE

L3 2 SEA FILE=REGISTRY SSS FUL L1

L4 47 SEA FILE=HCAPLUS ABB=ON PLU=ON L3

=&gt; d l4 ibib abs hitstr 1-47

L4 ANSWER 1 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1325643 HCAPLUS Full-text

DOCUMENT NUMBER: 144:64308

TITLE: Noopept improves the spatial memory and stimulates  
prefibrillar  $\beta$ -amyloid(25-35) antibody production  
in mice

AUTHOR(S): Bobkova, N. V.; Gruden, M. A.; Samokhin, A. N.;  
Medvinskaya, N. I.; Elistratova, E. I.; Morozova-Roch,  
L.; Gudasheva, T. A.; Ostrovskaya, R. U.; Seredenin,  
S. B.

CORPORATE SOURCE: Institute of Cell Biophysics, Russian Academy of  
Sciences, Pushchino, Moscow oblast, 142292, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya  
(2005), 68(5), 11-15

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The effects of the novel proline-containing nootropic and neuroprotective dipeptide noopept (GVS-111, N-phenylacetyl-L-prolylglycine Et ester) were studied on NMRI mice upon olfactory bulbectomy, which had been previously shown to imitate the main morphol. and biochem. signs of Alzheimer's disease (AD). The spatial memory was assessed using the Morris (water maze) test; the immunol. status was characterized by ELISA with antibodies to prefibrillar  $\beta$ -amyloid(25-35), S100b protein, and protofilaments of equine lysozyme, which are the mol. factors involved in the pathogenesis of AD. The control (sham-operated) animals during the Morris test preferred a sector where the safety platform was placed during the learning session. Bulbectomized animals

treated with saline failed to recognize this sector, while bulbectomized animals treated with noopept (0.91 mg/kg for 21 days) restored this predominance, thus demonstrating the improvement of the spatial memory. These animals also demonstrated an increase in the level of antibodies to  $\beta$ -amyloid(25-35) - the effect, which was more pronounced in the sham-operated than in bulbectomized mice. The latter demonstrated a profound decrease of immunol. reactivity in a large number of tests. Noopept, stimulating the production of antibodies to  $\beta$ -amyloid(25-35), can attenuate the well-known neurotoxic effects of  $\beta$ -amyloid. The obtained data on the mnemotropic and immunostimulant effects noopept are indicative of good prospects for the clin. usage of this drug in the therapy of patients with neurodegenerative diseases.

IT 157115-85-0, Noopept

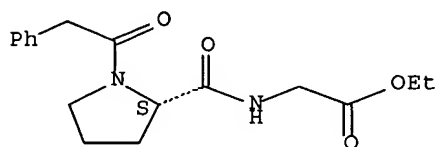
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(nootropic and neuroprotectant noopept improves spatial memory and stimulates prefibrillar  $\beta$ -amyloid antibody production: implication for use as Alzheimer's treatment)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 2 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:459658 HCAPLUS Full-text

DOCUMENT NUMBER: 143:19848

TITLE: Comparative study of the long-term behavioral effects of noopept and piracetam in adult male rats and female rats in postnatal period

AUTHOR(S): Voronina, T. A.; Guzevatykh, L. S.; Trofimov, S. S.

CORPORATE SOURCE: Laboratory of Psychopharmacology, Zakusov Institute of Pharmacology, Russian Academy of Medical Sciences, Moscow, 125315, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (2005), 68(2), 3-7

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium

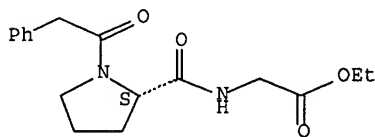
DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Adult male and female rats were treated with the nootropic peptide drug noopept (daily dose, 0.1 mg/kg) and piracetam (200 mg/kg). In the period from 8th to 20th day, both drugs (cognitive enhancers) suppressed the horizontal and vertical activity and the anxiety in test animals as compared to the control group treated with 0.9 % aqueous NaCl solution. Early postnatal injections of the nootropes influenced neither the morphol. development nor the behavior of adult female rats in the plus maze, extrapolational escape, passive avoidance, and pain sensitivity threshold tests. Animals in the "intact" group (having received neither drugs not physiol. solution, i.e., developing in a poor sensor environment), showed less pronounced habituation in the open field test as compared to the control and drug treated groups.

IT 157115-85-0; Noopept  
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL  
 (Biological study); USES (Uses)  
 (comparative study of long-term behavioral effects of noopept and  
 piracetam in adult male rats and female rats in postnatal period)  
 RN 157115-85-0 HCAPLUS  
 CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

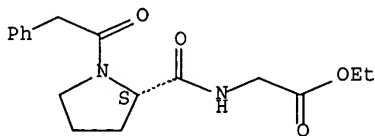


L4 ANSWER 3 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2004:797579 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 142:127345  
 TITLE: Neurotransmitters in development of adaptive behaviour  
 induced by GVS-111 injection  
 AUTHOR(S): Lysenko, A. V.; Mendzeritsky, A. M.; Morgul, E. V.;  
 Elfimova, N. K.; Ostrovskaya, R. U.  
 CORPORATE SOURCE: State Pedagogical University, Rostov-on-Don, Russia  
 SOURCE: Neirokhimiya (2004), 21(2), 138-146  
 CODEN: NERODV; ISSN: 1027-8133  
 PUBLISHER: Nauka  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

AB A single administration of the dipeptide drug GVS-111 induced changes in the  
 ratio of active to inactive periods during the sleep cycle and the increase in  
 the resistance of organism and was mediated by the ability of the drug to  
 interact with the neurotransmitter systems of the brain.

IT 157115-85-0, GVS-111  
 RL: DMA (Drug mechanism of action); THU (Therapeutic use); BIOL  
 (Biological study); USES (Uses)  
 (brain neurotransmitters in development of adaptive behavior induced by  
 GVS-111 injection)  
 RN 157115-85-0 HCAPLUS  
 CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



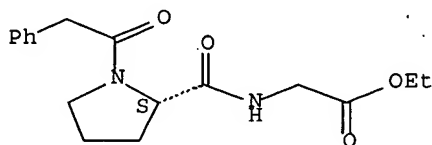
L4 ANSWER 4 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2004:248042 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 140:314378  
 TITLE: Interspecies differences in noopept pharmacokinetics  
 AUTHOR(S): Boiko, S. S.; Korotkov, S. A.; Zherdev, V. Rp.;  
 Gudashcheva, T. A.; Ostrovskaya, R. U.; Voronina, T. A.  
 CORPORATE SOURCE: Laboratory of Pharmacokinetics, Institute of  
 Pharmacology, Russian Academy of Medical Sciences,  
 Moscow, 125315, Russia  
 SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya  
 (2004), 67(1), 40-43  
 CODEN: EKFAE9; ISSN: 0869-2092  
 PUBLISHER: Izdatel'stvo Folium  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

AB Significant interspecies differences in the pharmacokinetics of noopept are manifested by a decrease in the drug elimination rate on the passage from rats to rabbits and humans. Very intensive metabolism of noopept was observed upon i.v. administration in rats. In these animals, presystemic elimination mechanisms lead to the formation of a specific metabolite representing a product of drug biotransformation hydroxylated at the Ph ring. In rabbits, unchanged noopept circulates in the blood for a longer time upon both i.v. and oral administration, biotransformation proceeds at a much slower rate, and no metabolites analogous to that found in rats are detected. The noopept pharmacokinetics in humans differs from that in animals by still slower elimination and considerable individual variability. No drug metabolites are found in the human blood plasma, probably because of a relatively small dose and low concentration

IT 157115-85-0, Noopept  
 RL: BSU (Biological study, unclassified); PKT (Pharmacokinetics); BIOL  
 (Biological study)  
 (interspecies differences in noopept pharmacokinetics)  
 RN 157115-85-0 HCAPLUS  
 CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 5 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2004:153218 HCAPLUS Full-text  
 DOCUMENT NUMBER: 141:833  
 TITLE: Heparin compounds with glycine and glycine-containing  
 dipeptide and their effects on parameters of  
 hemostasis  
 AUTHOR(S): Lyapina, L. A.; Pastorova, V. E.; Ostrovskaya, R. Yu.  
 CORPORATE SOURCE: Kafedra Fiziol. Cheloveka Zhivotnykh, Mosk. Gos.  
 Univ., Moscow, Russia  
 SOURCE: Vestnik Moskovskogo Universiteta, Seriya 16: Biologiya  
 (2003), (4), 7-11  
 CODEN: VMUBDF; ISSN: 0137-0952  
 PUBLISHER: Izdatel'stvo Moskovskogo Universiteta  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

AB Heparin-glycine and heparin-GVS-111 complexes were prepared by mixing solns. of heparin and glycine or heparin and GVS-111 with final wts. ratios 1:10 and 1:1, resp. These complexes had anticoagulating and fibrinolytic activities after the i.v. injection.

IT 157115-85-0D, GVS-111, complexes with heparin

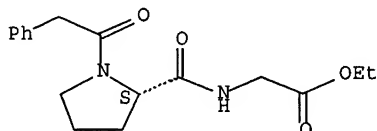
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(heparin complexes with glycine and glycine-containing dipeptide, GVS-111, and their effects on parameters of hemostasis)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 6 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:147004 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 141:1167

TITLE: Lipid peroxidation in the cerebral cortex and blood plasma of young rats with a high level of anxiety under emotional stress: Protective effect of nootropic dipeptide GVS-111

AUTHOR(S): Mendzeritskyl, A. M.; Lysenko, A. V.; Demianenko, S. V.; Prokofiev, V. N.; Gudasheva, T. A.; Ostrovskaya, R. U.

CORPORATE SOURCE: Rostov State Pedagogical University, Russia

SOURCE: Neirokhimiya (2003), 20(4), 281-286

CODEN: NERODV; ISSN: 1027-8133

PUBLISHER: Nauka

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB In young rats selected for a high level of anxiety, the nootropic drug GVS-111 administered 1 h prior to a 24-h restraint stress prevented stress-induced accumulation of lipid peroxidn. products in brain cortical synaptosomes and blood plasma. The antioxidant effect of GVS-111 may be a result of the activation of antioxidant defense systems and may be involved in the antimutagenic effects of the drug.

IT 157115-85-0, GVS-111

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

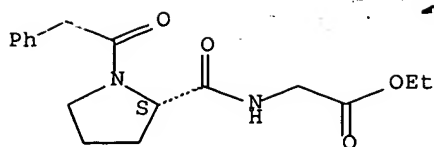
(lipid peroxidn. in cerebral cortex and blood plasma of young rats with high level of anxiety under emotional stress and protective effect of nootropic dipeptide GVS-111)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.





L4 ANSWER 7 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2003:971842 HCAPLUS Full-text  
 DOCUMENT NUMBER: 140:13074  
 TITLE: Therapeutic methods for treatment of mild cognitive impairment and progression to Alzheimer's disease  
 INVENTOR(S): Pearlman, Rodney  
 PATENT ASSIGNEE(S): Saegis Pharmaceuticals, Inc., USA  
 SOURCE: PCT Int. Appl., 16 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

APP.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003101391	A2	20031211	WO 2003-US17161	20030529
WO 2003101391	A3	20040304		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003231937	A1	20031219	AU 2003-231937	20030529
US 2005233976	A1	20051020	US 2005-515981	20050615
PRIORITY APPLN. INFO.:			US 2002-384754P	P 20020529
			WO 2003-US17161	W 20030529

OTHER SOURCE(S): MARPAT 140:13074

AB The invention provides methods for treating a symptom of mild cognitive impairment (MCI) as well as methods for slowing the progression from MCI to Alzheimer's disease (AD).

IT 157115-85-0

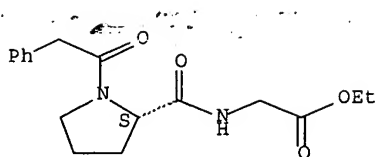
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(therapeutic methods for treatment of mild cognitive impairment and progression to Alzheimer's disease)

RN 157115-85-0 HCAPLUS

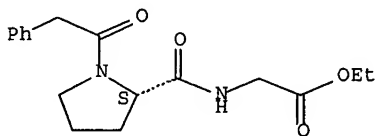
CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 8 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2003:851966 HCAPLUS Full-text  
 DOCUMENT NUMBER: 141:99469  
 TITLE: Effect of noopept and afobazole on the development of  
 neurosis of learned helplessness in rats  
 AUTHOR(S): Uyanaev, A. A.; Fisenko, V. P.; Khitrov, N. K.  
 CORPORATE SOURCE: Department of General Pathology, Department of  
 Pharmacology, Therapeutic Faculty, I.M. Sechenov  
 Moscow Medical Academy, Russia  
 SOURCE: Bulletin of Experimental Biology and Medicine  
 (Translation of Byulleten Eksperimental'noi Biologii i  
 Meditsiny) (2003), 136(2), 162-164  
 CODEN: BEXBAN; ISSN: 0007-4888  
 PUBLISHER: Kluwer Academic/Consultants Bureau  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB We studied the effects of new psychotropic prepns. noopept and afobazole on  
 acquisition of the conditioned active avoidance response and development of  
 neurosis of learned helplessness in rats. Noopept in doses of 0.05-0.10 mg/kg  
 accelerated acquisition of conditioned active avoidance response and reduced  
 the incidence of learned helplessness in rats. Afobazole in a dose of 5 mg/kg  
 produced an opposite effect, which is probably related to high selective  
 anxiolytic activity of this preparation  
 IT 157115-85-0, Noopept  
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL  
 (Biological study); USES (Uses)  
 (effect of noopept and afobazole on conditioned active avoidance  
 response and development of neurosis of learned helplessness in rats)  
 RN 157115-85-0 HCAPLUS  
 CN Glycine, 1-(phenylacetyl)-L-propyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2003:740535 HCAPLUS Full-text  
 DOCUMENT NUMBER: 140:139268  
 TITLE: Selective suppression of the slow-inactivating

AUTHOR(S): potassium currents by nootropics in molluscan neurons  
Bukanova, Julia V.; Solntseva, Elena I.; Skrebitsky, Vladimir G.

CORPORATE SOURCE: Brain Research Institute, Russian Academy of Medical Sciences, Moscow, 103064, Russia

SOURCE: International Journal of Neuropsychopharmacology  
(2002), 5(3), 229-237  
CODEN: IJNUFB; ISSN: 1461-1457

PUBLISHER: Cambridge University Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The role of the voltage-gated K<sup>+</sup> channels in the effect of some nootropics was investigated. Earlier, the multiple effect of high concns. of two nootropics, piracetam and its peptide analog GVS-111, on Ca<sup>2+</sup> and K<sup>+</sup> currents of molluscan neurons was shown. In the present work, we describe the selective effect of low concns. of these nootropics as well as vinpocetine on certain types of K<sup>+</sup> current. The expts. were performed on isolated neurons of the land snail *Helix pomatia* using a two-microelectrode voltage-clamp method. The inward voltage-gated Ca<sup>2+</sup> current (ICa) and three subtypes of the outward voltage-gated K<sup>+</sup> current were recorded: Ca<sup>2+</sup>-dependent K<sup>+</sup> current (IK(Ca)), delayed rectifying current (IKD), and fast-inactivating K<sup>+</sup> current (IA). It has been found that ICa was not changed in the presence of 30 μM vinpocetine, 100 μM piracetam or 10 nM GVS-111, while slow-inactivating, TEA-sensitive IK(Ca) and IKD were inhibited (IK(Ca) more strongly than IKD). In contrast, the fast-inactivating, 4-AP-sensitive K<sup>+</sup> current (IA) was not diminished by low concns. of piracetam and GVS-111, while vinpocetine even augmented it. A possible role of slow-inactivating subtypes of the K<sup>+</sup> channels in the development of different forms of dementia is discussed.

IT 157115-85-0, GVS-111

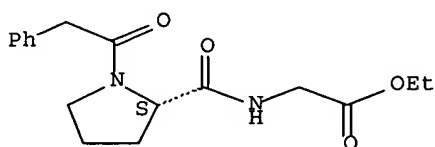
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(selective suppression of the slow-inactivating potassium currents by nootropics in molluscan neurons)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:674723 HCAPLUS Full-text

DOCUMENT NUMBER: 140:264224

TITLE: Cyclopropyl Glycine and Proline-Containing Preparation  
Noopept Evoke Two Types of Membrane Potential  
Responses in Synaptoneurosomes

AUTHOR(S): Lutsenko, V. K.; Vukolova, M. N.; Gudasheva, T. A.

CORPORATE SOURCE: Institute of General Pathology and Pathophysiology,  
Russian Academy of Medical Sciences, Russia

SOURCE: Bulletin of Experimental Biology and Medicine  
 (Translation of Byulleten Eksperimental'noi Biologii i  
 Meditsiny) (2003), 135(6), 559-562  
 CODEN: BEXBAN; ISSN: 0007-4888  
 PUBLISHER: Kluwer Academic/Consultants Bureau  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Proline, cyclo(Pro-Gly), and acyl-prolyl-containing dipeptide GVS-111 decreased synaptoneurosome membrane potential in a  $\text{Ca}^{2+}$ -free medium. The efficiency of these preps. decreased in the following order: GVS>cyclo(Pro-Gly)>proline. Depolarization responses induced by endogenous nootropic agent cyclo(Pro-Gly) was dose-dependent and saturable; the threshold concentration of cyclo(Pro-Gly) was  $10^{-9}$  M. In a  $\text{Ca}^{2+}$ -containing medium GVS and cyclo(Pro-Gly) induced both hyperpolarizing and depolarizing membrane responses of synaptoneurosomes. Possible mechanisms underlying changes in the membrane potential of synaptoneurosomes induced by nootropic agents are discussed. It was interesting whether modulation of electrogenesis can improve memory and potentiate the neuroprotective effect of the test nootropic agents.

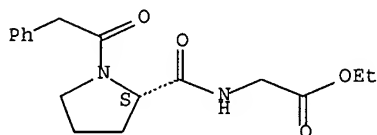
IT 157115-85-0, GVS-111

RL: PAC (Pharmacological activity); BIOL (Biological study)  
 (cyclopropyl glycine and noopept evoke two types of membrane potential responses in synaptoneurosomes)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 11 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:626636 HCAPLUS Full-text

DOCUMENT NUMBER: 140:296884

TITLE: Ultra-low doses of different biologically active substances regulate neuronal functional states: nonspecific effect

AUTHOR(S): Terekhova, S. F.; Grechenko, T. N.

CORPORATE SOURCE: Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, Moscow, 119991, Russia

SOURCE: Radiatsionnaya Biologiya, Radioekologiya (2003), 43(3), 315-319

CODEN: RBIREJ; ISSN: 0869-8031

PUBLISHER: Nauka

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The role of biol. active substances in ultra-low doses ( $10^{-15}$ - $10^{-27}$  mol/l) is discussed from a different point of view. The most detailed anal. of neurobiol. effects produced by these doses can be studied on isolated molluscan neurons. In this case, the possibility arises to control the first modifications of action at the electrophysiol. characteristics of neuronal activity. These changes of elec. activity can be regarded as a reaction to

biol. active substance. The following characteristics were controlled: the level of membrane resting potential (MP), the electroexcitable membrane and pacemaker mechanism, chemical sensitivity of somatic membrane loci to neurotransmitter acetylcholine (ACh). Several substances were used in these expts.: two kinds of synthetic antioxidant, GABA, ethanol, serotonin, DSIP (delta-sleep inducing peptide), antibiotic ruboxil, nootrop GVS-111. The isolated neurons were placed into a special chamber. All these substances (0.35 mL) were added single dosing into the chamber with living physiol. solution in concentration 10<sup>-15</sup>-10<sup>-27</sup> mol/l. The results demonstrated that all substances had initiated the development of prolonged neurophysiol. responses. The intensities of neuronal reactions did not depend in contact period on the concentration and on the type of substance. It is suggested that these data reveal the existence of unknown modes of regulation of neuronal functional states and presence of hidden channel for information transfer and receiving. This different way of regulation is extremely important influence in living organisms.

IT 157115-85-0, GVS-111

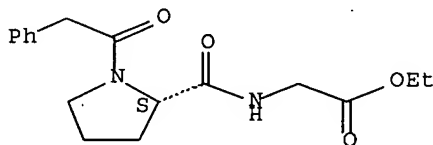
RL: PAC (Pharmacological activity); BIOL (Biological study)

(ultra-low doses of different biol. active substances nonspecific regulation of neuronal function)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 12 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:614521 HCAPLUS Full-text

DOCUMENT NUMBER: 140:122576

TITLE: Effective method for reproducing amnesia in mice under complex extreme conditions

AUTHOR(S): Yasnetsov, Vic. V.; Provomova, N. A.

CORPORATE SOURCE: Pharmacol. Dep., Moscow State Med. Stomatol. Univ., Moscow, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (2003), 66(3), 66-68

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB It is suggested to reproduce a retrograde amnesia in mice by means of a complex extremal action: emaciating swim in cold water with simultaneous wheel rotation. It was found that nootropes such as pyracetam, mexidol, semax, nooglutil, acephen, and noopept fully or completely prevent from the amnesia development.

IT 157115-85-0, Noopept

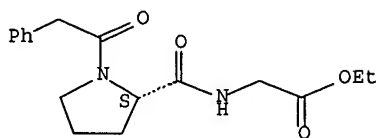
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(antiamnesic effect of nootropes under extreme conditions)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 13 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:600381 HCAPLUS Full-text

DOCUMENT NUMBER: 140:53004

TITLE: Effect of piracetam and its analogs on the content of phosphoinositides and their metabolites in whole blood and blood immunocompetent cells of rats in sensibilization and anaphylactic shock

AUTHOR(S): Demidova, M. A.; Slyusar, N. N.; Il'nitskaya, I. Yu.

CORPORATE SOURCE: Kafedra Farmakol. Kursom Klin. Farmakol., TGMA, Russia

SOURCE: Aktual'nye Problemy Biokhimii i Biotekhnologii (2001), 120-127. Editor(s): Gribanov, G. A. Tverskoi Gosudarstvennyi Universitet: Tver, Russia.  
CODEN: 69EHFF

DOCUMENT TYPE: Conference

LANGUAGE: Russian

AB The aim was to study the effect of of piracetam and GVS-111 on the level of phosphoinositides and their metabolites in blood immunocompetent cells of rats in sensibilization and anaphylactic shock. Piracetam and GVS-111 restored dysregulated phosphoinositide metabolism in immunocompetent cells in allergy and anaphylactic shock.

IT 157115-85-0, GVS111

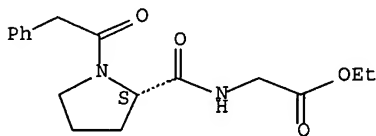
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(effect of piracetam and its analogs on content of phosphoinositides and their metabolites in whole blood and blood immunocompetent cells of rats in sensibilization and anaphylactic shock)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 14 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:373052 HCAPLUS Full-text

DOCUMENT NUMBER: 139:159291

TITLE: Evolution of the neuroprotection problem

AUTHOR(S): Ostrovskaya, R. U.

CORPORATE SOURCE: Zakusov Institute of Pharmacology, Russian Academy of Medical Sciences, Moscow, 125315, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (2003), 66(2), 32-37  
CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Russian

AB A review on the development of neuroprotectants from the discovery of neuroprotectant effects of GABA shunt metabolites (particularly  $\alpha$ -hydroxybutyric acid and succinic semialdehyde) in hypoxia; the neuroprotectant action of endogenous oligopeptides; the development of biol. stable dipeptides, based primarily on pyroglutamate and proline, with neuroprotectant actions, especially substituted acyl-prolyl dipeptides. The pharmacol. effects of one such compound, noopept, were discussed in detail.

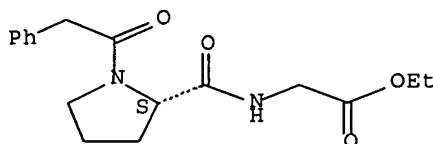
IT 157115-85-0, Noopept

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(neuroprotectants)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 15 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:311394 HCAPLUS Full-text

DOCUMENT NUMBER: 139:391136

TITLE: GVS-111 prevents oxidative damage and apoptosis in normal and Down's syndrome human cortical neurons

AUTHOR(S): Pelsman, Alejandra; Hoyo-Vadillo, Carlos; Gudasheva, Tatiana A.; Seredenin, Sergei B.; Ostrovskaya, Rita U.; Busciglio, Jorge

CORPORATE SOURCE: Department of Neuroscience, University of Connecticut Health Center, Farmington, CT, 06030, USA

SOURCE: International Journal of Developmental Neuroscience (2003), 21(3), 117-124  
CODEN: IJDND6; ISSN: 0736-5748

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The neuroprotective activity of a novel N-acylprolyl-containing dipeptide analog of the nootropic 2-oxo-1-pyrrolidine acetamide (Piracetam) designated as GVS-111 (DVD-111/Noopept) was tested in two in vitro models of neuronal degeneration mediated by oxidative stress: normal human cortical neurons treated with H<sub>2</sub>O<sub>2</sub>, and Down's syndrome (DS) cortical neurons. Incubation of normal cortical neurons with 50  $\mu$ M H<sub>2</sub>O<sub>2</sub> for 1 h resulted in morphol. and structural changes consistent with neuronal apoptosis and in the degeneration of more than 60% of the neurons present in the culture. GVS-111 significantly increased neuronal survival after H<sub>2</sub>O<sub>2</sub>-treatment displaying a dose-dependent

neuroprotective activity from  $10^{-5}$  M to 100  $\mu$ M, and an  $IC_{50}$  value of  $1.21 \pm 0.07$   $\mu$ M. GVS-111 inhibited the accumulation of intracellular free radicals and lipid peroxidn. damage in neurons treated with H<sub>2</sub>O<sub>2</sub> or FeSO<sub>4</sub>, suggesting an antioxidant mechanism of action. GVS-111 exhibited significantly higher neuroprotection compared to the standard cognition enhancer Piracetam, or to the antioxidants Vitamin E, Pr gallate and N-tert-butyl-2-sulfo- phenylnitron (s-PBN). In DS cortical cultures, chronic treatment with GVS-111 significantly reduced the appearance of degenerative changes and enhanced neuronal survival. The results suggest that the neuroprotective effect of GVS-111 against oxidative damage and its potential nootropic activity may present a valuable therapeutic combination for the treatment of mental retardation and chronic neurodegenerative disorders.

IT 157115-85-0, GVS-111

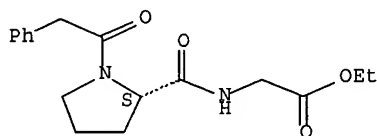
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(GVS-111 prevents oxidative damage and apoptosis in normal and Down's syndrome human cortical neurons)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 16 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:236268 HCAPLUS Full-text

DOCUMENT NUMBER: 140:12827

TITLE: Impairment of Learning and Memory after  
Photothrombosis of the Prefrontal Cortex in Rat Brain:  
Effects of Noopept

AUTHOR(S): Romanova, G. A.; Shakova, F. M.; Gudasheva, T. A.;  
Ostrovskaya, R. U.

CORPORATE SOURCE: Institute of General Pathology and Pathophysiology;  
Institute of Pharmacology, Russian Academy of Medical  
Sciences, Moscow, Russia

SOURCE: Bulletin of Experimental Biology and Medicine  
(Translation of Byulleten Eksperimental'noi Biologii i  
Meditsiny) (2002), 134(6), 528-530  
CODEN: BEXBAN; ISSN: 0007-4888

PUBLISHER: Kluwer Academic/Consultants Bureau

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Expts. were performed on rats trained conditioned passive avoidance response. Acquisition and retention of memory traces were impaired after photothrombosis of the prefrontal cortex. The acyl-prolyl-containing dipeptide Noopept facilitated retention and retrieval of a conditioned passive avoidance response, normalized learning capacity in animals with ischemic damage to the cerebral cortex, and promoted finish training in rats with hereditary learning deficit. These results show that Noopept improves all three stages of memory.



henko: It should be emphasized, that the effect of Noopept was most pronounced in animals with impaired mnemonic function.

IT 157115-85-0, Noopept

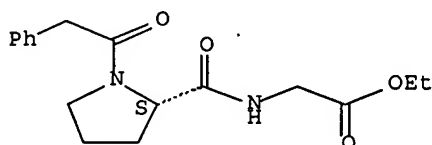
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(noopept improvement of learning and memory impairments after photothrombosis of prefrontal cortex in rats)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 17 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:62776 HCAPLUS Full-text

DOCUMENT NUMBER: 139:30631

TITLE: Role of the non-NMDA glutamate receptors in the EEG effects under long-term administration of the nootropic peptide GVS-111 in non-anesthetized rats

AUTHOR(S): Kovalev, G. I.; Vorob'ev, V. V.

CORPORATE SOURCE: Laboratory of Radioisotope, Institute of Pharmacology, Russian Academy of Medical Sciences, Moscow, 125315, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (2002), 65(6), 6-9

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Participation of the non-NMDA glutamate receptor subtype in the formation of the EEG frequency spectrum was studied in wakeful rats upon a long-term (10 x 0.2 mg/kg, s.c.) administration of the nootropic dipeptide GVS-111 (noopept or N-phenylacetyl-L-prolylglycine ethylate). The EEGs were measured with electrodes implanted into somatosensor cortex regions, hippocampus, and a cannula in the lateral ventricle. The acute reactions (characteristic of nootropes) in the  $\alpha$  and  $\beta$  ranges of EEG exhibited inversion after the 6th injection of noopept and almost completely vanished after the 9th injection. Preliminary introduction of the non-NMDA antagonist GDEE (glutamic acid di-Et ester) in a dose of 1  $\mu$ mole into the lateral ventricle restored the EEG pattern observed upon the 6th dose of GVS-111. The role of glutamate receptors in the course of a prolonged administration of nootropes, as well as the possible mechanisms accounting for a difference in the action of GVS-111 and piracetam are discussed.

IT 157115-85-0, Noopept

RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

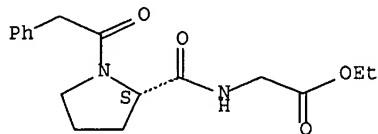
(role of non-NMDA glutamate receptors in EEG effects under long-term administration of nootropic peptide GVS-111 in non-anesthetized rats)

10/515,981

September 26, 2006

157115-85-0. HCAPLUS  
 CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 18 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2002:736099 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:242195  
 TITLE: Methods for restoring cognitive function following systemic stress  
 INVENTOR(S): Pearlman, Rodney; Tempero, Ken  
 PATENT ASSIGNEE(S): David Pharmaceuticals, USA  
 SOURCE: PCT Int. Appl., 49 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

Mo MCI  
 P.  
 APPL.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002074293	A2	20020926	WO 2002-US8105	20020315
WO 2002074293	A3	20030828		
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PRIORITY APPLN. INFO.:				
			US 2001-275937P	P 20010315
			US 2001-293375P	P 20010524
			US 2002-99537	A1 20020315
			WO 2002-US8105	W 20020315

OTHER SOURCE(S): MARPAT 137:242195

AB The invention provides methods for treating cognitive decline associated with systemic stress using a cognitive enhancing agent such as a hormone, a herb, an amino acid, a coenzyme, an acetylcholinesterase inhibitor, a muscarinic agonist, an inhibitor of angiotensin-converting enzyme, a centrally-acting calcium channel blocker, or a GABAB antagonist. The cognitive enhancing agent

is also a derivative of phosphinic acid, a pyrrolo-pyrazino-indole compound, or a peptide. The systemic stress is due to an environmental event, a health problem, a medical treatment, e.g., surgery, or trauma.

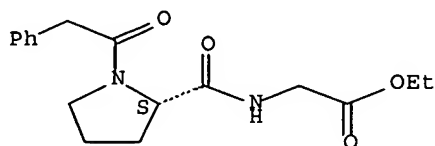
IT 157115-85-0

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(agents for restoring cognitive function following systemic stress)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 19 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:378162 HCAPLUS Full-text

DOCUMENT NUMBER: 137:304479

TITLE: Antiinflammatory properties of noopept (dipeptide  
nootropic drug GVS-111)

AUTHOR(S): Kovalenko, L. P.; Miramedova, M. G.; Alekseeva, S. V.;  
Gudasheva, T. A.; Ostrovskaya, R. U.; Seredenin, S. B.

CORPORATE SOURCE: Lab. Lekarstvennoi Toksikol., NII Farmakol., RAMN,  
Moscow, 125315, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya  
(2002), 65(2), 53-55

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB It is established that single i.v. (0.5 and 5 mg/kg, p.o.) or single peroral (10, 50, 100 mg/kg) and prolonged peroral (5 mg/kg, over 10 days) administration of noopept produces a dose-dependent inhibition of the model inflammatory response to Con A in CBA mice. I.v.-injected (5 mg/kg) noopept suppressed the acute nonimmune carrageenan-induced foot inflammation in rats by 62.2% within 3 h. The most pronounced antiinflammatory effect of dipeptide was observed on the model of adjuvant arthritis in rats, where the drug administered over 25 days in a daily dose of 0.5 mg/kg (i.m.) or 5 mg/kg (p.o.) significantly reduced the chronic immune inflammation (on the 12 th day, by 94.0 and 74.1%, resp.). The in vitro expts. with neutrophilic leukocytes of F1(CBA·C57BL/6) mice treated with noopept in a single dose of 5 mg/kg (i.v.) showed a 5- to 6-fold suppression of the chemiluminescence stimulated by opsoinized zymosan or phorbolmyristate acetate. It is suggested that the antiinflammatory activity of noopept is probably related to its antioxidant properties.

IT 157115-85-0, GVS-111

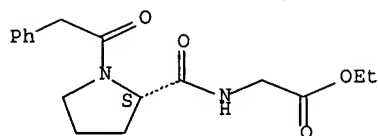
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL  
(Biological study); USES (Uses)

(antiinflammatory effect of nootropic dipeptide noopept GVS-111:  
relation to antioxidant properties)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 20 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:378076 HCAPLUS Full-text

DOCUMENT NUMBER: 137:304530

TITLE: Multicomponent antithrombotic effect of the neuroprotector prolyl-containing dipeptide GVS-111 and its metabolite cyclo-L-prolylglycine

AUTHOR(S): Ostrovskaya, R. U.; Lyapina, L. A.; Pastorova, V. E.; Mirzoev, T. Kh.; Gudasheva, T. A.; Seredenin, S. B.; Ashmarin, I. P.

CORPORATE SOURCE: Lab. Psikhofarmakol., Inst. Farmakol., RAMN, Moscow, 125315, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (2002), 65(2), 34-37

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The expts. in vivo showed that the new nootropic prolyl-containing GVS-111 produces an antithrombotic effect, influencing various stages of the blood coagulation process. GVS-111 exhibits anticoagulant and fibrinolytic properties and enhances fibrin destabilization by reducing the XIIIa factor activity. These effects are manifested upon both i.p. (1 mg/kg) and peroral (10 mg/kg) administration of GVS-111 (in both cases, a single daily treatment over a period of 10 days). The same effects (anticoagulant, fibrinolytic, antifibrin-stabilizing) were observed in in vitro expts. with both GVS-111 (10<sup>-3</sup>-10<sup>-6</sup> M) and its main metabolite cyclo-L-prolylglycine (up to 10<sup>-10</sup> M). In addition, the latter metabolite exhibited an antiaggregant effect. The antithrombotic activity of GVS-111, together with previously established neuroprotector properties, low toxicity, and the absence of complications, makes this compound a promising antistroke drug.

IT 157115-85-0, GVS-111

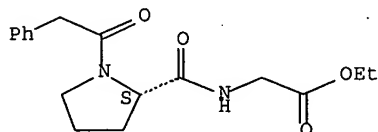
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(antithrombotic action mechanism of nootropic dipeptide GVS-111 and its metabolite: promising antistroke agent)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 21 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2002:378060 HCAPLUS Full-text  
DOCUMENT NUMBER: 137:304651  
TITLE: Effect of the novel dipeptide nootropic drug noopept and its metabolite cyclo-L-prolylglycine upon transcallosal evoked potential in rat brain  
AUTHOR(S): Molodavkin, G. M.; Borlikova, G. G.; Voronina, T. A.; Gudasheva, T. A.; Ostrovskaya, R. U.; Tushmalova, N. A.; Seredenin, S. B.  
CORPORATE SOURCE: Lab. Psikhofarmakol., Inst. Farmakol., RAMN, Moscow, 125315, Russia  
SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (2002), 65(2), 3-5  
CODEN: EKFAE9; ISSN: 0869-2092  
PUBLISHER: Izdatel'stvo Folium  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian

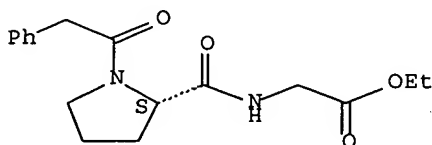
AB The effect of new nootropic dipeptides - noopept (N-phenylacetyl-L-prolylglycine, GVS-111) and its metabolite (cyclo-L-prolylglycine) - and a standard nootropic piracetam - on the transcallosal evoked potential (TEP) in rat brain was studied. In the dose range from 150 to 300 mg/kg, piracetam increased the TEP amplitude, which exhibited a maximum after 1.5-2 h and then gradually decreased. Both noopept and cyclo-L-prolylglycine also increased the TEP amplitude, which attained a plateau and retained this level over the entire observation time (above 3.5 h). All the nootropics studied increased both components of the evoked potential. Piracetam and cyclo-L-prolylglycine led to an approx. equal increase in both waves, while noopept induced a somewhat greater increase in the neg. TEP wave amplitude. It is suggested that the pos. effect of noopept and cyclo-L-prolylglycine upon the interhemispheric signal transfer (indicated by the improved transcallosal response) can be considered as a potential neurophysiol. basis for a pos. drug influence on the behavioral level.

IT 157115-85-0, Noopept  
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(novel dipeptide nootropic drug noopept and its metabolite cyclo-L-prolylglycine effect on brain elec. activity)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



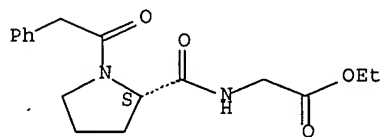
L4 ANSWER 22 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2002:314295 HCAPLUS Full-text  
DOCUMENT NUMBER: 137:332951  
TITLE: Proline-containing dipeptide GVS-111 retains nootropic activity after oral administration  
AUTHOR(S): Ostrovskaya, R. U.; Mirsoev, T. Kh.; Romanova, G. A.;

CORPORATE SOURCE: Gudasheva, T. A.; Kravchenko, E. V.; Trofimov, C. C.;  
Voronina, T. A.; Seredenin, S. B.  
Institute of Pharmacology, Russian Academy of Medical  
Science, Moscow, Russia  
SOURCE: Bulletin of Experimental Biology and Medicine  
(Translation of Byulleten Eksperimental'noi Biologii i  
Meditsiny) (2002), Volume Date 2001, 132(4), 959-962  
CODEN: BEXBAN; ISSN: 0007-4888  
PUBLISHER: Kluwer Academic/Consultants Bureau  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Expts. on rats trained passive avoidance task showed that N-phenyl-acetyl-L-prolyl-glycyl Et ester, peptide analog of piracetam (GVS-111, Noopept) after oral administration retained anti-amnesic activity previously observed after its parenteral administration. EDs were 0.5-10 mg/kg. Expts. on a specially-developed model of active avoidance (massive one-session learning schedule) showed that GVS-111 stimulated one-session learning after single administration, while after repeated administration it increased the number of successful learners among those animals who failed after initial training. In this respect, GVS-111 principally differs from its main metabolite cycloprolylglycine and standard nootropic piracetam.

IT 157115-85-0, Noopept  
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL  
(Biological study); USES (Uses)  
(proline-containing dipeptide GVS-111 retains nootropic activity after oral administration)  
RN 157115-85-0 HCAPLUS  
CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 23 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2002:275296 HCAPLUS Full-text  
DOCUMENT NUMBER: 137:149756  
TITLE: Pharmacokinetics of the new potential dipeptide  
nootrope GVS-111 and related metabolites in rat brain  
AUTHOR(S): Boiko, S. S.; Zherdev, V. P.; Gudasheva, T. A.;  
Korotkov, S. A.; Ostrovskaya, R. U.  
CORPORATE SOURCE: Institute of Pharmacology, Russian Academy of Medical  
Sciences, Moscow, Russia  
SOURCE: Pharmaceutical Chemistry Journal (Translation of  
Khimiko-Farmatsevticheskii Zhurnal) (2001), 35(9),  
474-476  
CODEN: PCJOAU; ISSN: 0091-150X  
PUBLISHER: Kluwer Academic/Consultants Bureau  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The pharmacokinetics of GVS-111 (N-phenylacetyl-L-prolylglycine Et ester), a novel dipeptide nootrope, and related metabolites, and cycloprolylglycine was determined in rat brain upon parenteral introduction. GVS-111 rapidly penetrated through the blood brain barrier and was detected in the brain homogenates, reaching a maximum concentration 10 min after injection. The level of unchanged GVS-111 was significantly higher in the brain tissue than in the blood throughout this stage, indicating a certain tropism of the drug to the former tissue. The PAA content in the brain also considerably increased 10 min after GVS-111 injection, while a maximum concentration was reached at a point corresponding to 30 min, which was lower in the brain than that in the blood plasma. A maximum concentration of cycloprolylglycine in brain and blood was achieved 1 h after GVS-111 introduction, but the metabolite level in the brain tissue was about two times that in the blood plasma.

IT 157115-85-0, GVS-111

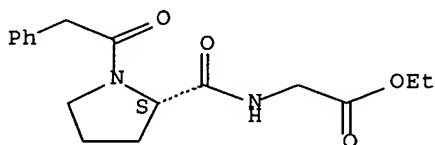
RL: PKT (Pharmacokinetics); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(pharmacokinetics of GVS-111 in rat brain)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 24 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:223754 HCAPLUS Full-text

DOCUMENT NUMBER: 137:134711

TITLE: Preclinical characterization of the toxicity of noopept

AUTHOR(S): Kovalenko, L. P.; Smol'nikova, N. M.; Alekseeva, S. V.; Nemova, E. P.; Sorokina, A. V.; Miramedova, M. G.; Kurapova, S. P.; Sidorina, E. I.; Kupakova, A. V.; Dauge-Dauge, N. O.

CORPORATE SOURCE: Lab. Lek. Toksikol., NII Farmakol., RAMN, Moscow, 125315, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (2002), 65(1), 62-64

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Within the framework of a preclin. investigation, the new nootrope drug noopept (N-phenyl-acetyl-L-prolyl-glycine ethylate) was tested for chronic toxicity upon peroral administration in a dose of 10 or 100 mg/kg over 6 mo in both male and female rabbits. The results of observations showed that noopept administered in this dose range induced no irreversible pathol. changes in the organs and systems studied and exhibited no allergenic, immunotoxic, and mutagen activity. The drug affected neither the generative function nor the antenatal or postnatal progeny development. Noopept produced a dose-dependent

suppression of inflammation reaction to Con A and stimulated the cellular and humoral immune response in mice.

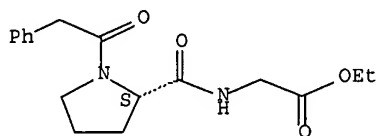
IT 157115-85-0, Noopept

RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (preclin. characterization of toxicity and efficacy of noopept in rabbits and mice)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 25 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:28553 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 136:303945

TITLE: Effects of nootropes on the neuron activity in cerebral cortex

AUTHOR(S): Yasnetsov, V. V.; Pravdivtsev, V. A.; Krylova, I. N.; Kozlov, S. B.; Provornova, N. A.; Ivanov, Yu. V.; Yasnetsov, Vik, V.

CORPORATE SOURCE: Dept. of Pharmacology, "Gidrobios" Res. and Production Center, Ministry of Public Health of the Russian Fed., Moscow, 129301, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (2001), 64(6), 3-6

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The effects of nootropes (semax, mexidol, and GVS-111) on the activity of individual neurons in various cerebral cortex regions was studied by microelectrode and microiontophoresis techniques in cats immobilized by myorelaxants. It was established that the inhibiting effect of mexidol upon neurons, in more than half of cases, is prevented or significantly decreased by the GABA antagonists bicuculline and picrotoxin. The inhibiting effect of semax and GVS-111 upon neurons in more than half of cases is related to stimulation of the M-choline and NMDA receptors, resp.

IT 157115-85-0, GVS-111

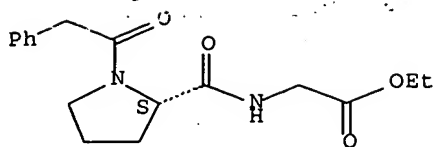
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (nootropics effect on neurons activity in cerebral cortex)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.





L4 ANSWER 26 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:367348 HCAPLUS Full-text

DOCUMENT NUMBER: 135:162440

TITLE: Behavioral and electrophysiological analysis of the cholino-positive effect of the nootropic acyl-prolyn containing dipeptide GVS-111

AUTHOR(S): Ostrovskaya, R. U.; Mirzoev, T. Kh.; Firova, F. A.; Trofimov, S. S.; Gudasheva, T. A.; Grechenko, T. N.; Gutyrchik, E. F.; Barkova, E. B.

CORPORATE SOURCE: Laboratory of Psychopharmacology, Institute of Pharmacology, Russian Academy of Medical Sciences, Moscow, 125315, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (2001), 64(2), 11-14

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Behavioral expts. using a passive avoidance learning model showed that the new cognition-enhancing acyl-prolyn containing dipeptide GVS-III promotes recovery of the test performance in animals with a long-term memory deficit caused by the M-cholinolytic scopolamine (1 mg/kg/day scopolamine for 20 days, followed by 0.5 mg/kg/day GVS-III for 10 days). At the same time, GVS-III increased the duration of tremor induced by the M-cholinomimetic arecoline. The results of electrophysicol. expts. showed that GVS-III in a concentration range from  $10^{-11}$  to  $10^{-9}$  M increased amplitude of the neural response to acetylcholine (ACh) microapplications in 75% of the isolated neurons of *Helix Pomatum* and produced a predominantly facilitating effect upon the endoneuronal pacemaker activity. The effect of GVS-III upon the ACh response in a part of neurons was attenuated or even blocked by scopolamine, and in the other neurons - by the N-cholinolytic d-tubocurarine. This fact indicates that both muscarinic and nicotinic receptors are involved in the mechanism of the cholino-sensitizing action of GVS-111 upon the neuronal activity.

IT 157115-85-0, GVS-111

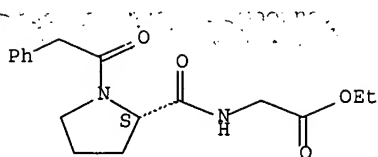
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(behavioral and electrophysiol. anal. of cholino-pos. effect of nootropic acyl-prolyn containing dipeptide GVS-111).

RN 157115-85-0 HCAPLUS

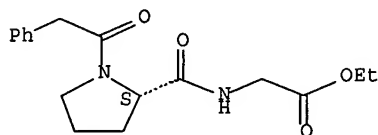
CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 27 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2001:214144 HCAPLUS Full-text  
 DOCUMENT NUMBER: 135:147305  
 TITLE: Antiamnesic effect of acyl-prolyl-containing dipeptide (GVS-111) in compression-induced damage to frontal cortex  
 AUTHOR(S): Romanova, G. A.; Mirzoev, T. Kh.; Barskov, I. V.; Victorov, I. V.; Gudasheva, T. A.; Ostrovskaya, R. U.  
 CORPORATE SOURCE: Institute of General Pathology and Pathophysiology, Russian Academy of Medical Sciences, Moscow, Russia  
 SOURCE: Bulletin of Experimental Biology and Medicine (Translation of Byulleten Eksperimental'noi Biologii i Meditsiny) (2001), Volume Date 2000, 130(9), 846-848  
 CODEN: BEXBAN; ISSN: 0007-4888  
 PUBLISHER: Consultants Bureau  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Antiamnesic effect of acyl-prolyl-containing dipeptide GVS-111 was demonstrated in rats with bilateral compression-induced damage to the frontal cortex. Both i.p. and oral administration of the dipeptide improved retrieval of passive avoidance responses in rats with compression-induced cerebral ischemia compared to untreated controls.  
 IT 157115-85-0, GVS-111  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)  
 (antiamnesic effect of acyl-prolyl-containing dipeptide (GVS-111) in compression-induced damage to frontal cortex)  
 RN 157115-85-0 HCAPLUS  
 CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 28 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2000:743339 HCAPLUS Full-text  
 DOCUMENT NUMBER: 134:260831  
 TITLE: Pharmacokinetics of new nootropic acylprolyldipeptide and its penetration across the blood-brain barrier

after oral administration

AUTHOR(S): Boiko, S. S.; Ostrovskaya, R. U.; Zherdev, V. P.; Korotkov, S. A.; Gudasheva, T. A.; Voronina, T. A.; Seredenin, S. B.

CORPORATE SOURCE: Laboratory of Pharmacokinetics, Institute of Pharmacology, Russian Academy of Medical Sciences, Moscow, Russia

SOURCE: Bulletin of Experimental Biology and Medicine (Translation of Byulleten Eksperimental'noi Biologii i Meditsiny) (2000), 129(4), 359-361  
CODEN: BEXBAN; ISSN: 0007-4888

PUBLISHER: Consultants Bureau

DOCUMENT TYPE: Journal

LANGUAGE: English

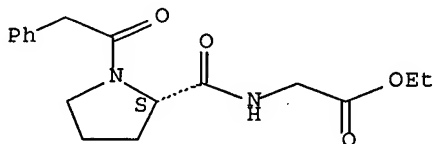
AB Pharmacokinetics of GVS-111, a new acylprolyldipeptide with nootropic properties and its penetration across the blood-brain barrier were studied in rats using HPLC. It was found that the dipeptide is absorbed in the gastrointestinal tract, enters the circulation, and penetrates through the blood-brain barrier in an unmodified state.

IT 157115-85-0, GVS-111  
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); PROC (Process); USES (Uses)  
(pharmacokinetics of GVS-111 and penetration across blood-brain barrier after oral administration)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 29 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:246320 HCAPLUS Full-text

DOCUMENT NUMBER: 133:12674

TITLE: NMDA component in the effects of piracetam and new nootropic peptide GVS-111 on the neocortical and hippocampal EEG in conscious rats

AUTHOR(S): Kovalev, G. I.; Vorob'ev, V. V.; Akhmetova, E. R.

CORPORATE SOURCE: Institute of Pharmacology, Russian Academy of Medical Sciences, Moscow, Russia

SOURCE: Bulletin of Experimental Biology and Medicine (Translation of Byulleten Eksperimental'noi Biologii i Meditsiny) (2000), Volume Date 1999, 128(8), 822-825  
CODEN: BEXBAN; ISSN: 0007-4888

PUBLISHER: Consultants Bureau

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effects of new nootropic dipeptide GVS-111 (N-phenylacetyl-L-prolylglycine Et ester) on EEG spectral characteristics were compared with

those of piracetam. The EEG was recorded in the cortex and hippocampus of nonanesthetized nonrestrained rats with chronically implanted electrodes. GVS-111 and piracetam induced similar changes in EEG spectral profile in both structures increasing the  $\alpha$ -band power and decreasing the power of the  $\beta$ - and  $\delta$ -bands. These effects were prevented by intracerebral injection of 10-10 mol NMDA receptor antagonist ( $\pm$ )-3-(2-carboxypiperazin-4-yl)-propyl-1-phosphonic acid. The data correlate with behavioral and neurochem. findings and suggest that NMDA receptors can be specifically involved in the mechanisms of nootropic effects of piracetam and GVS-111.

IT 157115-85-0, GVS-111

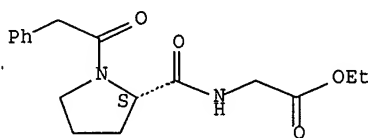
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(NMDA receptor in effects of piracetam and GVS-111 on neocortical and hippocampal EEG in conscious rats)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 30 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:644844 HCAPLUS Full-text

DOCUMENT NUMBER: 132:132225

TITLE: Memory-restoring and neuroprotective effects of the proline-containing dipeptide GVS-111 in a photochemical stroke model

AUTHOR(S): Ostrovskaya, R. U.; Romanova, G. A.; Barskov, I. V.; Shanina, E. V.; Gudasheva, T. A.; Victorov, I. V.; Voronina, T. A.; Seredenin, S. B.

CORPORATE SOURCE: Institute of Pharmacology, Russian Academy of Medical Sciences, Moscow, Russia

SOURCE: Behavioural Pharmacology (1999), 10(5), 549-553

CODEN: BPHAEI; ISSN: 0955-8810

PUBLISHER: Lippincott Williams & Wilkins

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Local thrombosis of the frontal cortex (Fr1 and Fr3 fields), caused by i.v. administration of the photosensitive dye Rose Bengal plus focused high-intensity illumination of the frontal bone, provoked a pronounced deficit in step-through passive avoidance performance in rats without concomitant motor disturbances. N-Phenylacetyl-L-prolylglycine Et ester (GVS-111), administered i.v. at 0.5 mg/kg/day, beginning 1 h after ischemic lesion and then for 9 postoperative days, attenuated the deficit. This treatment diminished the volume of the infarcted area. Thus, postischemic injection of GVS-111 demonstrated both cognition-restoring and neuroprotective properties. The cognition-restoring effect is probably due to an increase in neocortical and hippocampal neuronal plasticity. The neuroprotective effects of GVS-111 involve antioxidant activity with the ability to attenuate glutamate-provoked

neurotoxicity and blockade of voltage-gated ion channels, i.e., the compound mitigates the main metabolic shifts involved in the pathogenesis of brain ischemia.

IT 157115-85-0, GVS 111

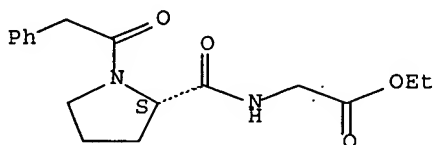
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(memory-restoring and neuroprotective effects of the proline-containing dipeptide GVS-111 in a stroke model)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 31 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:126036 HCAPLUS Full-text

DOCUMENT NUMBER: 131:537

TITLE: New trends in search for nootropic agents

AUTHOR(S): Voronina, T. A.

CORPORATE SOURCE: NII Farm., RAMN, Moscow, Russia

SOURCE: Vestnik Rossiiskoi Akademii Meditsinskikh Nauk (1998), (11), 16-21

CODEN: VAMEE3; ISSN: 0869-6047

PUBLISHER: Meditsina

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The paper describes the effects of the new nootropic agents nooglutyl and GVS-111. Nooglutyl, a derivative of L-glutamic and oxynicotinic acids that has glutamatergic effects, is a highly active drug in treating disturbances of memory and learning and protecting against ischemic neuronal damage and brain injury. GVS-111 is a substituted prolyl dipeptide that has the properties of enhancing cognitive functions and is able to prevent the learning impairment provoked by shock, scopolamine, brain injury, and other damages. Multimodal mechanisms are responsible for the nootropic effects of nooglutyl and GVS-111.

IT 157115-85-0, GVS-111

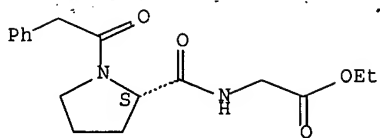
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(multimodal mechanisms of therapeutic effects of nootropic agents)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 32 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:729928 HCAPLUS Full-text

DOCUMENT NUMBER: 130:134013

TITLE: Effect of systemic administration of a new piracetam peptide analog on postresuscitation recovery of the central nervous system

AUTHOR(S): Nazarenko, I. V.; Kamenskii, A. A.; Gudasheva, T. A.; Volkov, A. V.

CORPORATE SOURCE: Institute of General Resuscitation, Russian Academy of Medical Sciences, Moscow, Russia

SOURCE: Bulletin of Experimental Biology and Medicine (Translation of Byulleten Eksperimental'noi Biologii i Meditsiny) (1998), 125(1), 26-29  
CODEN: BEXBAN; ISSN: 0007-4888

PUBLISHER: Consultants Bureau

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Changes in the functions of the central nervous system were analyzed in albino rats resuscitated after a 12-min cardiac arrest. At the end of the first month after resuscitation, when the neurol. status was completely restored, some emotional disturbances determining animal behavior were noted. Administration of GVS-111, a piracetam peptide analog, 30 min after the start of resuscitation increases survival rate, accelerates neurol. recovery, and normalizes emotional reactivity in survivors.

IT 157115-85-0, GVS-111

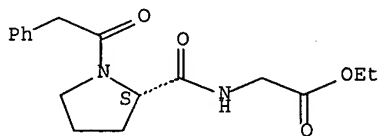
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(effect of systemic administration of a new piracetam peptide analog on postresuscitation recovery of the central nervous system)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 33 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:597878 HCAPLUS Full-text

DOCUMENT NUMBER: 130:396  
 TITLE: GVS-111, novel dipeptide cognition enhancer  
 AUTHOR(S): Ostrovskaya, R.; Trofimov, S.; Gudasheva, T.;  
 Romanova, G.; Bojko, S.; Voronina, T.; Seredenin, S.  
 CORPORATE SOURCE: Institute of Pharmacology, Russian Academy of Medical  
 Sciences, Moscow, 125315, Russia  
 SOURCE: Peptides 1996, Proceedings of the European Peptide  
 Symposium, 24th, Edinburgh, Sept. 8-13, 1996 (1998),  
 Meeting Date 1996, 699-700. Editor(s): Ramage,  
 Robert; Epton, Roger. Mayflower Scientific:  
 Kingswinford, UK.  
 CODEN: 66RCA5  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English

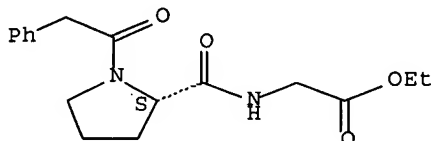
AB GVS-111 diminished the learning and memory disturbances caused by various  
 damaging influences. It showed neither stimulating, nor sedative effects over  
 a wide dose range. Taking into consideration its high specific activity,  
 revealed in the wide spectrum of cognition damages, the effectiveness in case  
 of the systemic administration, including peroral one, and extremely wide  
 safety margin (EDs 0.1-0.7 mg/kg, toxic doses 5000 mg/kg), GVS-111 would be  
 considered as a promising cognition enhancer. Pharmacokinetic study of GVS-111  
 demonstrated the formation of cyclo-Pro-Gly as the main metabolite. Being  
 administered exogenously (0.05-0.1 mg/kg, i.p.), this substance was revealed  
 to be able to exert the anti-amnesic effect, similar to that of the parent  
 drug.

IT 157115-85-0, GVS-111  
 RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or  
 effector, except adverse); BPR (Biological process); BSU (Biological  
 study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC  
 (Process); USES (Uses)  
 (dipeptide GVS-111 as cognition enhancer)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 34 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:589677 HCAPLUS Full-text

DOCUMENT NUMBER: 129:310796

TITLE: Effect of the novel nootropic dipeptide GVS-111 in  
 various functional disorders of the avoidance reaction

AUTHOR(S): Inozemtsev, A. N.; Trofimov, S. S.; Borlikova, G. G.;  
 Firova, F. A.; Pragina, L. L.; Gudasheva, T. A.;  
 Ostrovskaya, R. U.; Tushmalova, N. A.; Voronina, T. A.

CORPORATE SOURCE: MGU im. Lomonosova, Moscow, 119899, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya  
 (1998), 61(3), 10-12

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian

AB The authors studied the effect of a new nootropic agent with anxiolytic properties GVS-111 (Et ether N-phenylacetyl-L-prolylglycine) on formation of the avoidance reaction (AR) in rats and its functional disorders which were induced by two methods. In one case the stereotype of the relations between the stimulus, reaction and its consequence which developed during the experiment were urgently disturbed: the change of the animal to the other half of the chamber in response to a conditioned stimulus did not lead to its cutting off and prevention of the electropain stimulation for three successive combinations (AR error). In another case the spatial stereotype of the experiment was altered by changing the place of the opening through which the animal avoided the stimulus (spatial remodeling). I.p. injection of GVS-111 (0.1 mg/kg/day) improved the learning, but the effect differed from experiment to experiment. Along with this, the dipeptide prevented AR disturbance during the error and quickened restoration of the habit in spatial remodeling. It was shown earlier that AR disorder during an error are prevented by anxiolytics and nootropic agents but during spatial remodeling only by nootropic agents. It may be assumed that the pos. effect of GVS-111 on AR in functional disorders is due to its nootropic effect.

IT 157115-85-0, GVS-111

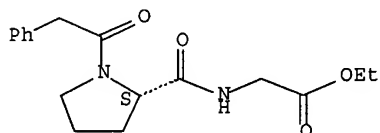
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(effect of nootropic dipeptide GVS-111 in various functional disorders of the avoidance reaction)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 35 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:468288 HCAPLUS Full-text

DOCUMENT NUMBER: 129:170390

TITLE: The effect of nootropics on the function of brain mitochondria during the course of craniocerebral trauma in immature rats

AUTHOR(S): Novikov, V. E.; Kovaleva, L. A.

CORPORATE SOURCE: Smolensk. Gos. Med. Akad., Smolensk, 214019, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (1998), 61(2), 65-68

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB A craniocerebral trauma was modeled in expts. on one-month-old rats. Oxidative phosphorylation in the brain mitochondria was studied by polarog. 1, 4, 7 days and 4 wk after the trauma. In the posttraumatic period the animals received piracetam (1 g/kg), picamilon (500 mg/kg), pyriditol (100 mg/kg), pantogam



(160-mg/kg), ACTC (5-10)(0.7 mg/kg), nooglutyl (25 mg/kg), and GVS (0.5 mg/kg). It was found that piracetam, picamilon, and nooglutyl have a protective effect on the function of the brain mitochondria during the course of a craniocerebral trauma. Nooglutyl surpasses all the other drugs in its effect on the oxidative phosphorylation in mitochondria in immature rats during the posttraumatic period.

IT 157115-85-0, GVS=111

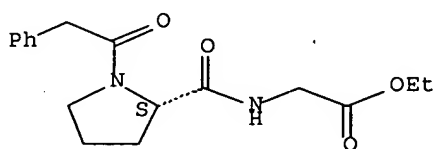
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(nootropics effect on brain mitochondria in craniocerebral trauma in immature rats)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 36 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:91026 HCAPLUS Full-text

DOCUMENT NUMBER: 128:226083

TITLE: The dipeptide nootropic agent GVS-111 prevents accumulation of lipid peroxidation products in immobilized rats

AUTHOR(S): Lysenko, A. V.; Uskova, N. V.; Ostrovskaya, R. U.; Gudasheva, T. A.; Voronina, T. A.

CORPORATE SOURCE: Inst. Neurokibernetics, Rostov State Univ., Rostov-na-Donu, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (1997), 60(5), 15-18

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Izdatel'stvo Folium

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Immobilization of rats in a narrow plastic chamber for 24 h caused a sharp increase in the level of diene conjugates and the content of schiff bases in the synaptosomes of the brain cortex as well as accumulation of extra erythrocytic Hb in blood serum. The dipeptide nootropic agent GVS-111 (Et ether of phenylacetylprolylglycine), when administered 15 and particularly 60 min before immobilization reduced the accumulation of these products of lipid peroxidn. in the brain and blood. GVS-111 demonstrated these signs of its antioxidant effect after a single i.p. injection in doses of 0.12 and 0.5 mg/kg. Piracetam produced a similar effect on the listed parameters in injection in a dose of 300 mg/kg for three successive days. The protective effect of the new piracetam dipeptide analog GVS-111 in relation to activation of free-radical processes induced by immobilization is addnl. proof of the antistress action of this dipeptide.

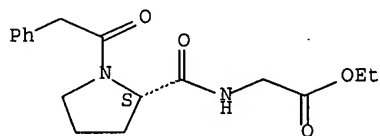
IT 157115-85-0, GVS-111

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(dipeptide nootropic GVS-111 prevents accumulation of lipid peroxidn.

products in immobilized rats).  
 RN 157115-85-0 HCAPLUS  
 CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 37 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:711642 HCAPLUS Full-text

DOCUMENT NUMBER: 127:326887

TITLE: The major metabolite of dipeptide piracetam analog GVS-111 in rat brain and its similarity to endogenous neuropeptide cyclo-L-prolylglycine

AUTHOR(S): Gudasheva, T. A.; Boyko, S. S.; Ostrovskaya, R. U.; Voronina, T. A.; Akparov, V. K.; Trofimov, S. S.; Rozantsev, G. G.; Skoldinov, A. P.; Zherdev, V. P.; Seredenin, S. B.

CORPORATE SOURCE: Chemistry Dep., Inst. Pharmacology, Moscow, 125315, Russia

SOURCE: European Journal of Drug Metabolism and Pharmacokinetics (1997), 22(3), 245-252  
 CODEN: EJDPD2; ISSN: 0378-7966

PUBLISHER: Medecine et Hygiene

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The metabolism of a new piracetam analog, the dipeptide cognitive enhancer N-phenylacetyl-L-prolylglycine Et ester (GVS-111) was studied in vivo. GVS-111 itself was not found in rat brain 1 h after 5 mg/kg i.p. administration up to limit of detection (LOD) under high performance liquid chromatog. (HPLC) conditions. Three substances corresponding to the 3 possible GVS-111 metabolites, namely phenylacetic acid, prolylglycine, and cyclo-prolylglycine, were found in exptl. rat brain samples as well as in controls using HPLC, gas chromatog. (GC), and gas chromatog.-mass spectrometry (GC-MS) methods. Only cyclo-prolylglycine concentration increased (2.5-fold) 1 h after GVS-111 administration. Cyclo-prolylglycine formation from GVS-111 in the presence of plasma and brain enzymes was shown in vitro. These data could be considered as evidence that GVS-111 is prodrug which converts in the body to cyclo-prolylglycine, and which is identical to the endogenous cyclopeptide that produces the nootropic activity.

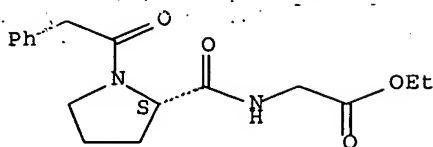
IT 157115-85-0, GVS-111

RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
 (GVS-111 metabolism)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 38 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:536140 HCAPLUS Full-text

DOCUMENT NUMBER: 127:185761

TITLE: The novel substituted acylproline-containing dipeptide, GVS-111, promotes the restoration of learning and memory impaired by bilateral frontal lobectomy in rats

AUTHOR(S): Ostrovsкая, R. U.; Romanova, G. A.; Trofimov, S. S.; Gudasheva, T. A.; Voronina, T. A.; Halikas, J. A.; Seredenin, S. B.

CORPORATE SOURCE: Institute of Pharmacology, Moscow, 125315, Russia

SOURCE: Behavioural Pharmacology (1997), 8(2 & 3), 261-268

CODEN: BPHAEL; ISSN: 0955-8810

PUBLISHER: Rapid Science Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The present study investigated the potential benefit of the Et ester of N-phenylacetylprolylglycine (GVS-111) on the model of bilateral frontal lobectomy (BFL) in rats. The animals in Experiment 1 were trained in an active avoidance task and subsequently underwent BFL. The animals in Experiment 2 were first assessed in an open field and in a passive avoidance test before the BFL was performed. BFL dramatically decreased performance in the active avoidance test, disturbed habituation of horizontal activity in the open field and diminished the latency to enter the dark compartment in the passive avoidance test. GVS-111, administered in a dose of 0.5 mg/kg/day i.p. for 9 days following the operation, was found to improve performance in both active avoidance and passive avoidance and restored habituation of horizontal activity in the lobectomized animals.

IT 157115-85-0, GVS-111

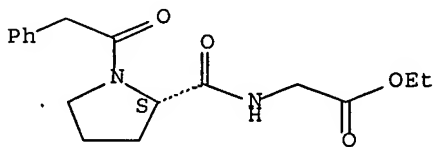
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(GVS-111 promotes restoration of learning and memory impaired by bilateral frontal lobectomy in rats)

RN 157115-85-0 HCAPLUS

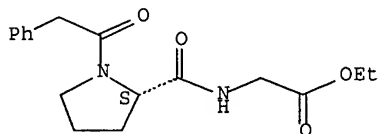
CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 39 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 1997:529186 HCAPLUS Full-text  
 DOCUMENT NUMBER: 127:229508  
 TITLE: The effect of agents with nootropic activity on oxidative phosphorylation in brain mitochondria in acute craniocerebral trauma  
 AUTHOR(S): Novikov, V. E.; Kovaleva, L. A.  
 CORPORATE SOURCE: Smolensk State Medical Academy, Smolensk, 214019, Russia  
 SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (1997), 60(1), 59-61  
 CODEN: EKFAE9; ISSN: 0869-2092  
 PUBLISHER: Izdatel'stvo Folium  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB An open craniocerebral trauma was simulated in rat expts. Oxidative phosphorylation in the brain mitochondria was studied by polygraphy 24 h after the trauma. It was found that trauma to the brain leads to inhibition of respiration in mitochondria in various metabolic states. Nooglutil in a dose of 50 mg/kg prevents these changes. Nooglutil is more effective than picamilon (500 mg/kg) and piriditol (100 mg/kg).  
 IT 157115-85-0, GVS 111  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (effect of agents with nootropic activity on oxidative phosphorylation in brain mitochondria in acute craniocerebral trauma)  
 RN 157115-85-0 HCAPLUS  
 CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 40 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 1997:451353 HCAPLUS Full-text  
 DOCUMENT NUMBER: 127:185304  
 TITLE: Pharmacokinetics of piracetam dipeptide analog with nootropic activity GVS-111 and its main metabolites  
 AUTHOR(S): Boiko, S. S.; Zherdev, V. P.; Dvoryaninov, A. A.; Gudasheva, T. A.; Ostrovskaya, R. U.; Voronina, T. A.; Rosantsev, G. G.; Seredenin, S. B.  
 CORPORATE SOURCE: Institute Pharmacology, Russian Academy Medical Sciences, Moscow, 125315, Russia  
 SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (1997), 60(2), 53-55  
 CODEN: EKFAE9; ISSN: 0869-2092  
 PUBLISHER: Izdatel'stvo Folium  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB The pharmacokinetics of a new nootropic dipeptide analog of Piracetam-N-phenylacetyl-L-prolyl-glycine (GVS-111) and its main metabolites were studied in rats by means of high performance liquid chromatog. and gas-liquid chromatog. The compound under study showed a greater resistance to an enzymic

to give more effect than natural neuropeptides. In addition to an unchanged compound three of its metabolites were found in the blood plasma of the rats. One of them, cyclo-Pro-Gly was an active metabolite of GVS-111.

IT 157115-85-0, GVS-111

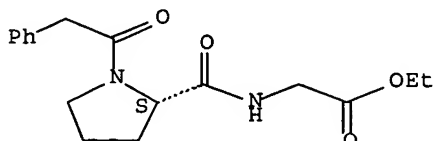
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)

(pharmacokinetics of piracetam dipeptide analog with nootropic activity GVS-111 and its main metabolites)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 41 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:395134 HCAPLUS Full-text

DOCUMENT NUMBER: 127:90410

TITLE: The effects of piracetam and its novel peptide analog GVS-111 on neuronal voltage-gated calcium and potassium channels

AUTHOR(S): Solntseva, E. I.; Bukanova, J. V.; Ostrovskaya, R. U.; Gudasheva, T. A.; Voronina, T. A.; Skrebitsky, V. G.

CORPORATE SOURCE: Inst. Brain Res., Russian Acad. Med. Sci., Moscow, 103064, Russia

SOURCE: General Pharmacology (1997), 29(1), 85-89

CODEN: GEPHDP; ISSN: 0306-3623

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB With the use of the two-microelectrode voltage-clamp method, three types of voltage-activated ionic currents were examined in isolated neurons of the snail *Helix pomatia*: high-threshold  $\text{Ca}^{2+}$  current ( $\text{ICa}$ ), high-threshold  $\text{Ca}^{2+}$ -dependent  $\text{K}^{+}$  current ( $\text{IK}(\text{Ca})$ ) and high-threshold  $\text{K}^{+}$  current independent of  $\text{Ca}^{2+}$  ( $\text{IK}(\text{V})$ ). The effect of bath application of the nootropics piracetam and a novel piracetam peptide analog, Et ester of N-phenyl-acetyl-L-prolylglycine (GVS-111), on these three types of voltage-activated ionic currents was studied. In more than half of the tested cells,  $\text{ICa}$  was resistant to both piracetam and GVS-111. In the rest of the cells,  $\text{ICa}$  decreased  $19 \pm 7\%$  with 2 mM of piracetam and  $39 \pm 14\%$  with 2  $\mu\text{M}$  of GVS-111.  $\text{IK}(\text{V})$  in almost all cells tested was resistant to piracetam at concns. up to 2 mM. However,  $\text{IK}(\text{V})$  in two-thirds of the cells was sensitive to GVS-111, being suppressed  $49 \pm 18\%$  with 1  $\mu\text{M}$  GVS-111.  $\text{IK}(\text{Ca})$  appeared to be the most sensitive current of those studied to both piracetam and GVS-111. Piracetam at 1 mM and GVS-111 at 0.1  $\mu\text{M}$  decreased the amplitude of  $\text{IK}(\text{Ca})$  in most of the cells examined by  $49 \pm 19\%$  and  $69 \pm 24\%$ , resp. The results suggest that piracetam and GVS-111 suppression of voltage-activated calcium and potassium currents of the neuronal membrane may regulate (both up and down)  $\text{Ca}^{2+}$  influx into neurons.

IT 157115-85-0, GVS-111

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES

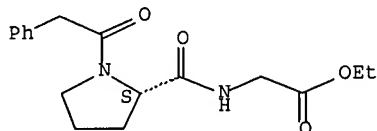
(U.S.S.)

(piracetam and analog GVS-111 effect on neuronal voltage-gated calcium and potassium channels)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 42 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:601368 HCAPLUS Full-text

DOCUMENT NUMBER: 126:354

TITLE: Determination of a nootropic peptide analog of piracetam and its main metabolites by HPLC

AUTHOR(S): Boiko, S. S.; Zherdev, V. P.; Gudasheva, T. A.; Vasilevich, N. I.; Ostrovskaya, R. U.; Voronina, T. A.; Rozantsev, G. G.

CORPORATE SOURCE: Institut Farmakologii, Rossiiskaya Akademiya Meditsinskikh Nauk, Moscow, 125315, Russia

SOURCE: Eksperimental'naya i Klinicheskaya Farmakologiya (1996), 59(2), 38-40

CODEN: EKFAE9; ISSN: 0869-2092

PUBLISHER: Meditsina

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB A HPLC method was developed for the pharmacokinetic study of GVS-111, a nootropic peptide analog of piracetam, and its main metabolites. In rat expts., the enzymes of blood plasma metabolized GVS-111 during 1-h incubation with the formation of phenylacetylproline as a main metabolite. The liver tissue enzymes metabolized GVS-111 much slower.

IT 157115-85-0, GVS 111

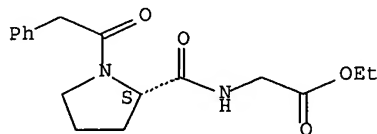
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)

(HPLC determination of nootropic peptide analog of piracetam and metabolites)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 43 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:384100 HCAPLUS Full-text

DOCUMENT NUMBER: 125:76147

TITLE: Effects of the nootropic agents piracetam and GVS-111 on potential-dependent ion channels of neuronal membranes

AUTHOR(S): Solntseva, E. I.; Bukonova, Yu. V.; Ostrovskaya, R. U.; Gudasheva, T. A.; Voronina, T. A.; Skrebetskii, V. G.

CORPORATE SOURCE: NII Mozga, Moscow, Russia

SOURCE: Byulleten Eksperimental'noi Biologii i Meditsiny (1996), 121(2), 151-155

CODEN: BEBMAE; ISSN: 0365-9615

PUBLISHER: Meditsina

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The nootropics piracetam and GVS-111 blocking activity on potassium and calcium neuronal membrane channels was shown in expts. on snails. The channel blocking activity of the nootropics is related to the mechanism of their anti-amnesic effect.

IT 157115-85-0

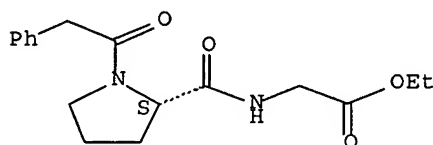
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(nootropics piracetam and GVS-111 blocking of potassium and calcium neuronal channels in relation to anti-amnesic activity)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 44 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:240740 HCAPLUS Full-text

DOCUMENT NUMBER: 125:1266

TITLE: Damage to the plastic properties of synaptic transmission in the rat hippocampus as a result of prenatal hypoxia and its normalization by treatment with nootropic dipeptides

AUTHOR(S): Chepkova, A. N.; Trofimov, S. S.; Smol'nikova, N. I.; Gudasheva, T. A.; Ostrovskaya, R. U.; Skrebetskii, V. G.

CORPORATE SOURCE: NII Mozga, Russia

SOURCE: Byulleten Eksperimental'noi Biologii i Meditsiny (1995), 120(12), 592-5

CODEN: BEBMAE; ISSN: 0365-9615

PUBLISHER: Meditsina

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The damaging effect of prenatal hypoxia on synaptic transmission in hippocampus and the beneficial effect of nootropic dipeptide treatment was shown in expts. on rats.

IT 157115-85-0

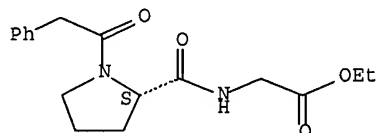
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(prenatal hypoxia damage to synaptic transmission in hippocampus and its treatment with nootropic dipeptides)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 45 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:185163 HCAPLUS Full-text

DOCUMENT NUMBER: 124:306499

TITLE: Synthesis and anti-amnesic activity of a series of N-acylprolyl-containing dipeptides

AUTHOR(S): Gudasheva, T. A.; Voronina, T. A.; Ostrovskaya, R. U.; Rozantsev, G. G.; Vasilevich, N. I.; Trofimov, S. S.; Kravchenko, E. V.; Skoldinov, A. P.; Seredenin, S. B.

CORPORATE SOURCE: Inst. Pharmacology, Russian Academy Medical Science, Moscow, 125315, Russia

SOURCE: European Journal of Medicinal Chemistry (1996), 31(2), 151-7

CODEN: EJMCA5; ISSN: 0223-5234

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Esters and amides of a series of N-acylprolyl-containing dipeptides were synthesized. It was established that these substances possess the ability to prevent memory decline evoked by maximal electroshock (MES) in a passive avoidance step-through paradigm. These N-acylprolyl-containing dipeptides were designed as analogs of pyroglutamyl-containing dipeptides, which were previously demonstrated to be highly active nootropics. Among the structure-activity relationships explored were the effect of N-acyl-substitution size, C-terminal substitution and the nature of the second amino acid. The optimal N-acyl moiety was the N-phenyl-acetyl group, while the optimal C-terminal substitution-esters were those derived from low alkyl acids. The optimal second amino acids were Asp, Glu or their fragments, Gly,  $\beta$ -Ala, GABA. N-phenylacetylprolylglycine Et ester was selected for further evaluation in impaired cognitive functions. It was supposed that esters and unsubstituted amides of N-acylprolylglycines are prodrugs, which convert to the bioactive cyclo-(Pro-Gly) by virtue of enzymic or chemical liability within the body.

IT 157115-85-0P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES



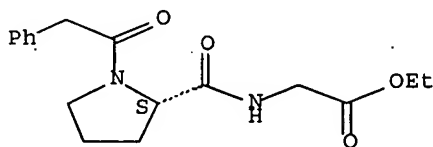
## (Uses)

(synthesis and anti-amnesic activity of a series of N-acylprolyl-containing dipeptides)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 46 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:793004 HCAPLUS Full-text

DOCUMENT NUMBER: 124:30405

TITLE: Preparation of biologically active n-acylprolyldipeptides having anti-amnesic, antihypoxic and anorexigenic effects

INVENTOR(S): Seredenin, Sergei B.; Voronina, Tatiana A.; Gudasheva, Tatiana A.; Ostrovskaya, Rita U.; Rozantsev, Grigori G.; Skoldinov, Alexander P.; Trophimov, Sergei S.; Halikas, James A.; Garibova, Taisija L.

PATENT ASSIGNEE(S): Russian-American Institute for New Drug Development, USA

SOURCE: U.S., 15 pp. Cont.-in-part of U.S. Ser. No. 868,000, abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5439930	A	19950808	US 1992-960905	19921014
WO 9321216	A1	19931028	WO 1993-US2333	19930315
W: AT, AU, BB, BG, BR, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KR, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, SN, TD, TG				
AU 9338084	A1	19931118	AU 1993-38084	19930315
PRIORITY APPLN. INFO.:			US 1992-868000	B2 19920414
			US 1992-960905	A 19921014
			WO 1993-US2333	A 19930315

OTHER SOURCE(S): MARPAT 124:30405

AB A novel class of substances of N-acyl-prolyldipeptides R1 CO-Pro-CHR2(CH2)nCOR3 (R1 = C4-5 alkyl, cycloalkyl, aralkyl, or aryl; R2 = H, Me, iso-Pr, iso-Bu, CH2CO2Et, CH2CH2CO2Et, CH2CONH2; R3 = OH, OMe, OEt, NH2, NHMe, NMe2; n = 0-3), which possess psychotropic activity and particularly facilitate learning and memory, are prepared. These peptides are used for treating sickle cell anemia and alc. withdrawal, diminishing mental decline in prenatally alcoholized offsprings and benzodiazepine withdrawal syndrome, and improving central nervous system. Thus, L-proline was acylated by

phenylacetyl chloride on aqueous NaOH at  $<10^{\circ}$  to give PhCOCH<sub>2</sub>-Pro-OH which was treated with iso-Bu chloroformate in the presence of Et<sub>3</sub>N in DMF at  $-10^{\circ}$  and condensed with H-Gly-OEt.HCl in the presence of Et<sub>3</sub>N to give PhCOCH<sub>2</sub>-Pro-Gly-OEt. In passive avoidance step-through paradigm with maximal electroshock using rats, the latter compound and PhCOCH<sub>2</sub>-Pro-Glu(OEt)-OEt at 0.1 mg/kg i.p. showed 36 and 58.3% antiamnesic activity estimated by the Butler's modified formula, resp.

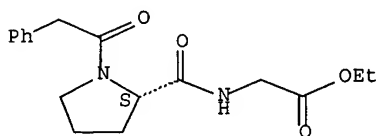
IT 157115-85-0P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation of N-acylprolyldipeptides having antiamnesic, antihypoxic and anorexigenic effects)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 47 OF 47 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:534807 HCAPLUS Full-text

DOCUMENT NUMBER: 121:134807

TITLE: Preparation of biologically active  
N-acylprolyldipeptides having antiamnesic,  
antihypoxic and anorexigenic effects

INVENTOR(S): Seredenin, Sergei Borisovich; Voronina, Tatiana  
Alexandrovna; Gudasheva, Tatiana Alexandrovna;  
Ostrovskaya, Rita Usherovna; Rozantsev, Grigori  
Grigorievich; Skoldinov, Alexander Petrovich;  
Trophimov, Sergei Sergeevich; Halikas, James  
Anastasio; Gariboca, Taisia L.

PATENT ASSIGNEE(S): Russian-American Institute for New Drug Development,  
USA

SOURCE: PCT Int. Appl., 48 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9321216	A1	19931028	WO 1993-US2333	19930315
W: AT, AU, BB, BG, BR, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, SN, TD, TG				
US 5439930	A	19950808	US 1992-960905	19921014
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PRIORITY APPLN. INFO.:			US 1992-868000	A 19920414

US 1992-060905

A 19921014

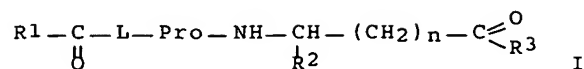
WO 1993-US2333

A 19930315

OTHER SOURCE(S):

MARPAT 121:134807

GI



AB Title compds. I [R1 = alkyl, cycloalkyl, aralkyl, aryl; R2 = H, alkyl, carbamidoalkyl, alkoxy-carbonylalkyl; R3 = OH, alkoxy, amino, alkylamino, dialkylamino; n = 0-3] are prepared E.g., proline was N-acylated with phenylacetyl chloride and the product was coupled with glycine Et ester-HCl to give N-phenylacetylprolylglycine Et ester, which at 0.1 mg/Kg s.c. showed 36% anti-amnesic activity in a passive avoidance step-through paradigm with maximal electroshock in rats.

IT 157115-85-0P

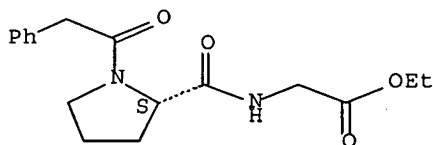
RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, as anti-amnesic, anti-hypoxic, and anorexigenic agent)

RN 157115-85-0 HCAPLUS

CN Glycine, 1-(phenylacetyl)-L-prolyl-, ethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



PRIOR ART SEARCH - BEILSTEIN

=&gt; fil beilst

FILE 'BEILSTEIN' ENTERED AT 18:42:10 ON 26 SEP 2006

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FILE LAST UPDATED ON JUNE 16, 2006

FILE COVERS 1771 TO 2006.

\*\*\* FILE CONTAINS 9,606,495 SUBSTANCES \*\*\*

>>>PLEASE NOTE: Reaction Data and substance data are stored in separate documents and can not be searched together in one query. Reaction data for BEILSTEIN compounds may be displayed immediately with the display codes PRE (preparations) and REA (reactions). A substance answer set retrieved after the search for a chemical name, a compounds with available reaction information by combining with PRE/FA, REA/FA or more generally with RX/FA. The BEILSTEIN Registry Number (BRN) is the link between a BEILSTEIN compound and belonging reactions. For more detailed reaction searches BRNs can be searched as reaction partner BRNs Reactant BRN (RX.RBRN) or Product BRN (RX.PBRN).<<<

&gt;&gt;&gt; FOR SEARCHING PREPARATIONS SEE HELP PRE &lt;&lt;&lt;

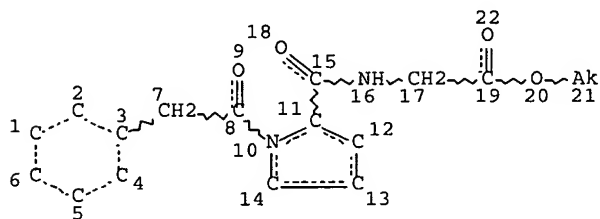
\*\*\*\*\*  
 \* PLEASE NOTE THAT THERE ARE NO FORMATS FREE OF COST. \*  
 \* SET NOTICE FEATURE: THE COST ESTIMATES CALCULATED FOR SET NOTICE \*  
 \* ARE BASED ON THE HIGHEST PRICE CATEGORY. THEREFORE; THESE \*  
 \* ESTIMATES MAY NOT REFLECT THE ACTUAL COSTS. \*  
 \* FOR PRICE INFORMATION SEE HELP COST \*  
 \*\*\*\*\*

## NEW

\* PATENT NUMBERS (PN) AND BABS ACCESSION NUMBERS (BABSAN) CAN NOW BE SEARCHED, SELECTED AND TRANSFERRED.  
 \* NEW DISPLAY FORMATS ALLREF, ALLP AND BABSAN SHOW ALL REFERENCES, ALL PATENT REFERENCES, OR ALL BABS ACCESSION NUMBERS FOR A COMPOUND AT A GLANCE.

=&gt; d que 110

L1 STR



NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 22

STEREO ATTRIBUTES: NONE

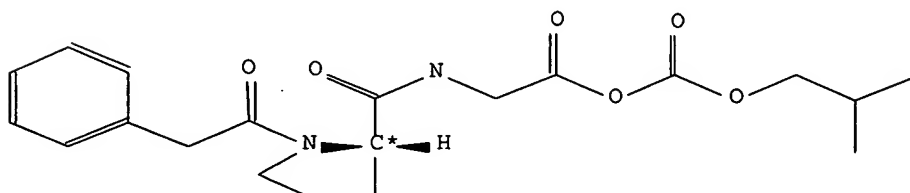
L9 2 SEA FILE=BEILSTEIN SSS FUL L1

L10 2 SEA FILE=BEILSTEIN ABB=ON PLU=ON L9 NOT RN/FA

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L10 ANSWER 1 OF 2 BEILSTEIN COPYRIGHT 2006 BEILSTEIN MDL on STN

Beilstein Records (BRN): 7498366  
 Molec. Formula (MF): C20 H26 N2 O6  
 Molecular Weight (MW): 390.44  
 Lawson Number (LN): 26264, 10590, 3379, 1762, 317  
 File Segment (FS): Stereo compound  
 Compound Type (CTYPE): heterocyclic  
 Constitution ID (CONSID): 6373415  
 Tautomer ID (TAUTID): 7074777  
 Beilstein Citation (BSO): 6-22  
 Entry Date (DED): 1996/11/12  
 Update Date (DUPD): 1996/11/12



## Field Availability:

Code	Name	Occurrence
BRN	Beilstein Records	1
MF	Molecular Formula	1
FW	Formular Weight	1
LN	Lawson Number	5
FS	File Segment	1
CTYPE	Compound Type	1
CONSID	Constitution ID	1
TAUTID	Tautomer ID	1
BSO	Beilstein Citation	1
DED	Entry Date	1
DUPD	Update Date	1

This substance also occurs in Reaction Documents:

Code	Name	Occurrence
RX	Reaction Documents	2

EXRMA Substance is Reaction Reactant 1  
 RXPRO Substance is Reaction Product 1

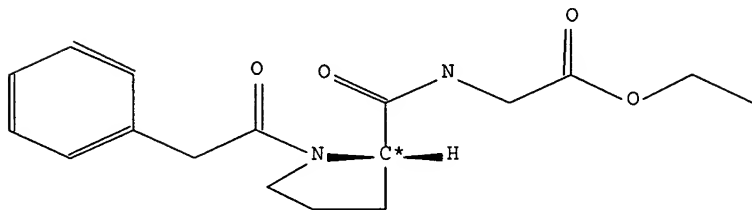
## All References:

## ALLREF

1. Gudasheva, T. A.; Voronina, T. A.; Ostrovskaya, R. U.; Rozantsev, G. G.; Vasilevich, N. I.; et al., Eur.J.Med.Chem.Chim.Ther., CODEN: BJMCA5, 31(2), <1996>, 151-158; BABS-6017175

L10 ANSWER 2 OF 2 BEILSTEIN COPYRIGHT 2006 BEILSTEIN MDL on STN

Beilstein Records (BRN): 7492297  
 Chemical Name (CN): N-phenylacetyl-L-prolylglycine ethyl ester  
 Autonom Name (AUN): <(1-phenylacetyl-pyrrolidine-2-carbonyl)-amino>-acetic acid ethyl ester  
 Molec. Formula (MF): C17 H22 N2 O4  
 Molecular Weight (MW): 318.37  
 Lawson Number (LN): 26264, 10590, 3379, 298  
 File Segment (FS): Stereo compound  
 Compound Type (CTYPE): heterocyclic  
 Constitution ID (CONSID): 6358912  
 Tautomer ID (TAUTID): 7069960  
 Beilstein Citation (BSO): 6-22  
 Entry Date (DED): 1996/11/12  
 Update Date (DUPD): 2003/01/18



## Field Availability:

Code	Name	Occurrence
BRN	Beilstein Records	1
CN	Chemical Name	1
AUN	Autonomname	1
MF	Molecular Formula	1
FW	Formular Weight	1
LN	Lawson Number	4
FS	File Segment	1
CTYPE	Compound Type	1
CONSID	Constitution ID	1
TAUTID	Tautomer ID	1

BSC	Reilstein Citation	1
DED	Entry Date	1
DUPD	Update Date	1
MP	Melting Point	1
NMR	Nuclear Magnetic Resonance	2
ORP	Optical Rotatory Power	1
PHARM	Pharmacological Data	3

This substance also occurs in Reaction Documents:

Code	Name	Occurrence
RX	Reaction Documents	4
RXREA	Substance is Reaction Reactant	3
RXPRO	Substance is Reaction Product	1

#### All References:

#### ALLREF

1. Boiko, S. S.; Zherdev, V. P.; Gudasheva, T. A.; Korotkov, S. A.; Ostrovskaya, R. U., Pharm.Chem.J. (Engl. Transl.), CODEN: PCJOAU, 35(9), <2001>, 474 - 476, Khim.Farm.Zh., CODEN: KHFZAN, 35(9), <2001>, 11 - 13; BABS-6366729
2. Gudasheva, T. A.; Voronina, T. A.; Ostrovskaya, R. U.; Rozantsev, G. G.; Vasilevich, N. I.; et al., Eur.J.Med.Chem.Chim.Ther., CODEN: EJMCA5, 31(2), <1996>, 151-158; BABS-6017175

## PRIOR APT SEARCH - MARPAT

=> fil marpat

FILE 'MARPAT' ENTERED AT 18:42:33 ON 26 SEP 2006

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FILE CONTENT: 1961-PRESENT VOL 145 ISS 10 (20060922/ED)

SOME MARPAT RECORDS ARE DERIVED FROM INPI DATA FOR 1961-1987

MOST RECENT CITATIONS FOR PATENTS FROM MAJOR ISSUING AGENCIES  
(COVERAGE TO THESE DATES IS NOT COMPLETE):

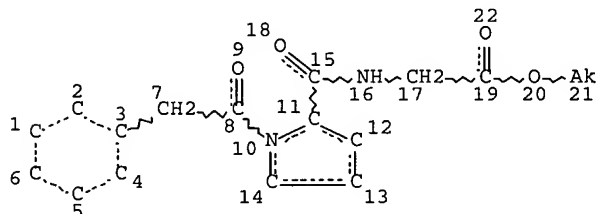
US 2006173222 03 AUG 2006  
DE 102005046001 13 JUL 2006  
EP 1679307 12 JUL 2006  
JP 2006190890 20 JUL 2006  
WO 2006084934 17 AUG 2006  
GB 2421947 12 JUL 2006  
FR 2880890 21 JUL 2006  
RU 2279450 10 JUL 2006  
CA 2531437 30 JUN 2006

Expanded G-group definition display now available.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

=> d que l14

L1 STR



## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 22

## STEREO ATTRIBUTES: NONE

L3 2 SEA FILE=REGISTRY SSS FUL L1  
L4 47 SEA FILE=HCAPLUS ABB=ON PLU=ON L3  
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L14 6 SEA FILE=MARPAT ABB=ON PLU=ON L13 NOT L4



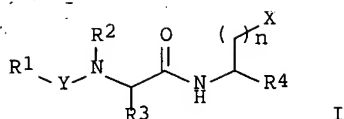
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L14 ANSWER 1 OF 6 MARPAT COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 136:325828 MARPAT Full-text  
 TITLE: Preparation of dipeptide derivatives as cell adhesion inhibitors  
 INVENTOR(S): Adams, Steven P.; Lin, Ko-Chung; Lee, Wen-Cherng; Castro, Alfredo C.; Zimmerman, Craig N.; Hammond, Charles E.; Liao, Yu-Sheng; Cuervo, Julio Hernan; Singh, Juswinder  
 PATENT ASSIGNEE(S): Biogen, Inc., USA  
 SOURCE: U.S., 50 pp., Cont.-in-part of U.S. 6,306,840.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

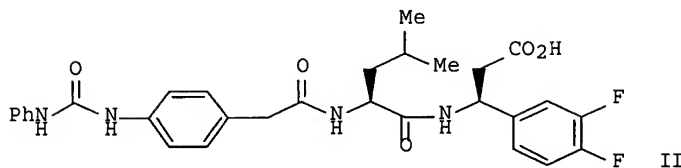
1-6  
 Not for  
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 file.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6376538	B1	20020423	US 1997-875321	19970919
US 6306840	B1	20011023	US 1995-376372	19950123
WO 9622966	A1	19960801	WO 1996-US1349	19960118
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE				
EP 1142867	A2	20011010	EP 2001-107877	19960118
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AU 766538	B2	20031016	AU 2000-62432	20001002
US 2003018016	A1	20030123	US 2001-2341	20011023
US 6630512	B2	20031007		
US 7001921	B1	20060221	US 2003-625626	20030724
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PRIORITY APPLN. INFO.:				
			US 1995-376372	19950123
			WO 1996-US1349	19960118
			AU 1996-49115	19960118
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GI



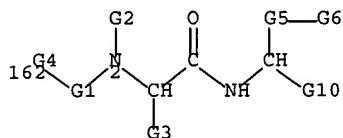
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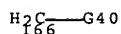
II

AB Novel dipeptide analogs I [ $X = \text{CO}_2\text{H}$ ,  $\text{PO}_3\text{H}^-$ ,  $\text{SO}_2\text{R}_5$ ,  $\text{SO}_3\text{H}$ ,  $\text{OPO}_3\text{H}^-$ ,  $\text{CO}_2\text{R}_4$ ;  $Y = \text{CO}$ ,  $\text{SO}_2$ ,  $\text{PO}_2$ ;  $n = 0-2$ ;  $\text{R}_1 =$  optionally substituted alkyl, alkenyl, alkynyl, aryl-fused cycloalkyl, cycloalkenyl, aryl, aralkyl, aralkenyl, aralkynyl, alkoxy, alkenyloxy, aralkoxy, alkylamino, alkenylamino, alkynylamino, aryloxy, arylamino, N-alkylurea-substituted alkyl, heterocyclyl;  $\text{R}_2 = \text{H}$ , aryl, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aralkyl;  $\text{R}_2\text{NCR}_3 =$  heterocyclic ring;  $\text{R}_3 =$  natural, unnatural, modified, or substituted amino acid side chain;  $\text{R}_4 =$  optionally substituted aryl, alkyl, cycloalkyl, alkenyl, cycloalkenyl, alkynyl, aralkyl, H, heterocyclyl, heterocyclylcarbonyl, aminocarbonyl, amido, alkylaminocarbonyl, arylaminocarbonyl, acylaminocarbonyl, acyl;  $\text{R}_5 =$  alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, aralkyl, aralkenyl, aralkynyl] are prepared as compds. useful for inhibition and prevention of cell adhesion and cell adhesion-mediated pathologies. This invention also relates to pharmaceutical formulations comprising these compds. and methods of using them for inhibition and prevention of cell adhesion and cell adhesion-mediated pathologies. The compds. and pharmaceutical compns. of this invention can be used as therapeutic or prophylactic agents. They are particularly well-suited for treatment of many inflammatory and autoimmune diseases. Thus,  $\beta$ -amino acid-containing dipeptide II, prepared by standard methods, displayed an  $\text{IC}_{50}$  of  $<50$  nM in a cell adhesion inhibition assay.

#### MSTR 1

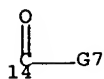


G1 = C(O)  
G4 = 166

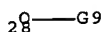


G5 = (0-2) CH<sub>2</sub>

G6 = 14



G7 = 28



G9 = alkyl &lt;containing 1-10 C&gt; (opt. substd. by G14)

G14 = CO<sub>2</sub>H

G40 = 182

G2 + G3 = CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>

Derivative:

Patent location:

Note:

or pharmaceutically acceptable derivatives

claim 1

substitution is restricted

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 2 OF 6 MARPAT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 135:180957 MARPAT Full-textTITLE: Preparation of novel antiarrhythmic peptides

INVENTOR(S): Larsen, Bjarne Due; Petersen, Jorgen Soberg; Meier, Eddi; Kjolbye, Anne Louise; Jorgensen, Niklas Rye; Nielsen, Morten Schak; Holstein-Rathlou, Niels-Henrik; Martins, James B.

PATENT ASSIGNEE(S): Zealand Pharmaceuticals A/S, Den.

SOURCE: PCT Int. Appl., 189 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001062775	A2	20010830	WO 2001-DK127	20010222
WO 2001062775	A3	20020131		

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,

10/515,981

September 26, 2006

SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, XU, ZA, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CT,  
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

CA 2385659 AA 20010830 CA 2001-2385659 20010222  
 EP 1226160 A2 20020731 EP 2001-907393 20010222  
 EP 1226160 B1 20041215

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
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JP 2003528826 T2 20030930 JP 2001-562556 20010222  
 AT 284896 E 20050115 AT 2001-907393 20010222  
 ES 2228807 T3 20050416 ES 2001-1907393 20010222  
 PT 1226160 T 20050429 PT 2001-907393 20010222  
 AU 781674 B2 20050602 AU 2001-35362 20010222  
 CA 2439101 AA 20021003 CA 2002-2439101 20020222  
 WO 2002077017 A2 20021003 WO 2002-US5773 20020222  
 WO 2002077017 A3 20031009

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,  
 PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,  
 UA, UG, US, UZ, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB,  
 GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA,  
 GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1370276 A2 20031217 EP 2002-723240 20020222

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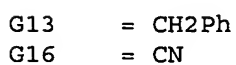
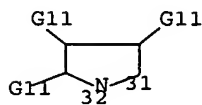
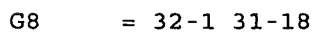
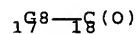
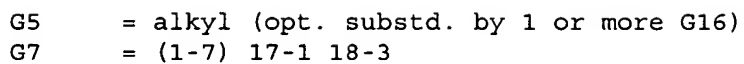
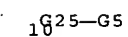
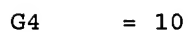
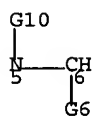
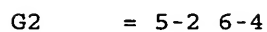
JP 2005506295 T2 20050303 JP 2002-576275 20020222  
 BR 2002007476 A 20060124 BR 2002-7476 20020222  
 NO 2003003641 A 20031020 NO 2003-3641 20030815  
 US 2005113293 A1 20050526 US 2003-646294 20030822  
 US 2005075280 A1 20050407 US 2004-772774 20040204  
 AU 2005205785 A1 20050929 AU 2005-205785 20050902

PRIORITY APPLN. INFO.:

DK 2000-288 20000223  
 DK 2000-738 20000504  
 US 2000-251659P 20001206  
 US 2001-792286 20010222  
 WO 2001-DK127 20010222  
 US 2001-314470P 20010823  
 WO 2002-US5773 20020222

AB Peptides X-A-B-Y and cyclo(X-A-B-Y) [A and B represents chemical moieties having an amino group (radical) and a carboxy group; X represents a peptide sequence of 1 to 3 D- or L-amino acid residues or an N-terminal modification of the group A-B when Y represents a C-terminal peptide sequence of 2 to 5 D- or L-amino acid residues; X represents a peptide sequence of 2 to 5 D- or L-amino acid residues when Y represents a C-terminal peptide sequence of 1 to 3 D- or L-amino acid residues; for the linear peptide, X is optionally chemical modified at its N-terminal and has an optional linking group comprising 0-8 backbone atoms] and their mirror image or a retro analogs or pharmaceutically acceptable derivs. were prepared for treating cardiac arrhythmias. Thus, Ac-D-Tyr-D-pro-D-4Hyp-Gly- D-Ala-Gly-NH<sub>2</sub> (4Hyp = 4-hydroxyprolyl) was prepared by the solid-phase method using TentaGel-S-Ram and examined for biol. activity [assays included effect on gap junction intercellular communication (GJIC) in cardiomyocytes, binding to tissue preps. of murine heart, and effect on cAMP formation in CHO cells].

• • •



G25 = 0  
 Patent location: claim 1  
 Note: substitution is restricted  
 Note: or pseudopeptide, cyclic or retro analogues

L14 ANSWER 3 OF 6 MARPAT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 125:248489 MARPAT Full-text

TITLE: Preparation of dipeptide derivatives as cell adhesion  
inhibitors

INVENTOR(S): Adams, Steven P.; Lin, Ko-Chung; Lee, Wen-Cherng;  
 Castro, Alfredo C.; Zimmerman, Craig N.; Hammond,  
 Charles E.; Liao, Yu-Sheng; Cuervo, Julio Hernan;  
 Singh, Juswinder

PATENT ASSIGNEE(S): Biogen, Inc., USA

SOURCE: PCT Int. Appl., 169 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

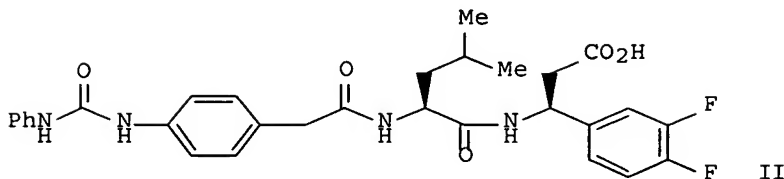
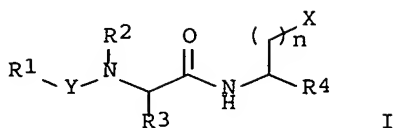
FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

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WO 9622966	A1	19960801	WO 1996-US1349	19960118
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RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE				
US 6306840	B1	20011023	US 1995-376372	19950123
CA 2211181	AA	19960801	CA 1996-2211181	19960118
AU 9649115	A1	19960814	AU 1996-49115	19960118
AU 718926	B2	20000504		
EP 805796	A1	19971112	EP 1996-905316	19960118
EP 805796	B1	20021211		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI				
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CN 1177343	A	19980325	CN 1996-192270	19960118
JP 10513160	T2	19981215	JP 1996-523071	19960118
EP 1142867	A2	20011010	EP 2001-107877	19960118
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ES 2183937	T3	20030401	ES 1996-905316	19960118
CZ 291556	B6	20030416	CZ 1997-2340	19960118
PT 805796	T	20030430	PT 1996-905316	19960118
EE 4111	B1	20030815	EE 1997-172	19960118
SK 283724	B6	20031202	SK 1997-987	19960118
PL 187313	B1	20040630	PL 1996-321848	19960118
RO 119885	B1	20050530	RO 1997-1369	19960118
TW 500714	B	20020901	TW 1996-85100690	19960122
IL 116846	A1	20021110	IL 1996-116846	19960122
NO 9703384	A	19970919	NO 1997-3384	19970722
NO 320914	B1	20060213		
FI 9703087	A	19970922	FI 1997-3087	19970722
BG 63383	B1	20011231	BG 1997-101841	19970821
US 6376538	B1	20020423	US 1997-875321	19970919

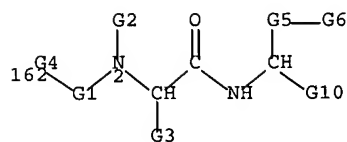
HK 1005207	A1	20030822	HK 1998-104006	19980508
AU 766538	B2	20031016	AU 2000-62432	20001002
US 2003083267	A1	20030501	US 2001-935461	20010822
US 6624152	B2	20030923		
US 2003018016	A1	20030123	US 2001-2341	20011023
US 6630512	B2	20031007		
US 7001921	B1	20060221	US 2003-625626	20030724
US 2006166866	A1	20060727	US 2003-679478	20031007
PRIORITY APPLN. INFO.:			US 1995-376372	19950123
			AU 1996-49115	19960118
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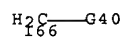


AB Novel dipeptide analogs I [X = CO<sub>2</sub>H, PO<sub>3</sub>H<sup>-</sup>, SO<sub>2</sub>R<sub>5</sub>, SO<sub>3</sub>H, OPO<sub>3</sub>H<sup>-</sup>, CO<sub>2</sub>R<sub>4</sub>, CONR<sub>4</sub>; Y = CO, SO<sub>2</sub>, PO<sub>2</sub>; n = 0-2; R<sub>1</sub> = optionally substituted alkyl, alkenyl, alkynyl, aryl-fused cycloalkyl, cycloalkenyl, aryl, aralkyl, aralkenyl, aralkynyl, alkoxy, alkenyloxy, aralkoxy, alkylamino, alkenylamino, alkynylamino, aryloxy, arylamino, N-alkylurea-substituted alkyl, heterocyclyl; R<sub>2</sub> = H, aryl, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl-substituted alkyl; R<sub>2</sub>NCR<sub>3</sub> = heterocyclic ring; R<sub>3</sub> = natural, unnatural, modified, or substituted amino acid side chain; R<sub>4</sub> = optionally substituted aryl, alkyl, cycloalkyl, alkenyl, cycloalkenyl, alkynyl, aryl-substituted alkyl, H, heterocyclyl, heterocyclylcarbonyl, aminocarbonyl, amido, alkylaminocarbonyl, arylaminocarbonyl, acylaminocarbonyl, acyl; R<sub>5</sub> = alkyl, alkenyl, cycloalkyl, cycloalkenyl, aryl, aralkyl, aralkenyl, aralkynyl] are prepared as compds. useful for inhibition and prevention of cell adhesion and cell adhesion-mediated pathologies. This invention also relates to pharmaceutical formulations comprising these compds. and methods of using them for inhibition and prevention of cell adhesion and cell adhesion-mediated pathologies. The compds. and pharmaceutical compns. of this invention can be used as therapeutic or prophylactic agents. They are particularly well-suited for treatment of many inflammatory and autoimmune diseases. Thus, β-amino acid-containing dipeptide II, prepared by standard methods, displayed an IC<sub>50</sub> of <50 nM in a cell adhesion inhibition assay.

MSTR 1



G1 = C(O)  
G4 = 166



G5 = (0-2) CH2  
G6 = 14



G7 = 28



G9 = alkyl <containing 1-10 C> (opt. substd. by G14)  
G14 = CO2H  
G40 = 182



G2 + G3 = CH2CH2CH2

Derivative:

Patent location:

Note:

or pharmaceutically acceptable derivatives

claim 1

substitution is restricted

L14 ANSWER 4 OF 6 MARPAT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER:

121:256334 MARPAT Full-text

TITLE:

CCK and/or gastrin receptor ligands

INVENTOR(S):

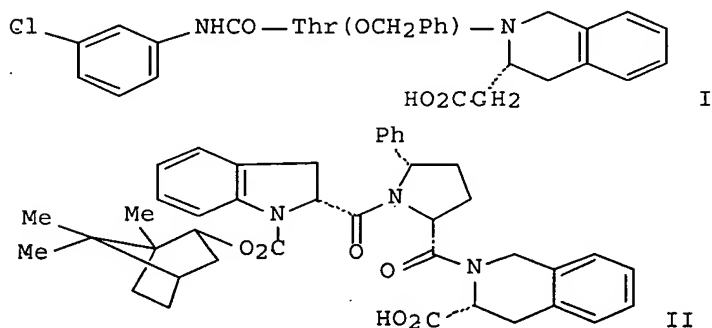
Ryder, Hamish; Kendrick, David Alan; Semple, Graeme;



Miyata, Keiji; Batt, Andrzej-Roman; Mathews, Elizabeth  
 Alice; Rooker, David Philip; Nishida, Akito  
 PATENT ASSIGNEE(S): Ferring B. V., Neth.; Yamanouchi Pharmaceutical Co.  
 Ltd.  
 SOURCE: PCT Int. Appl., 282 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9320099	A2	19931014	WO 1993-GB614	19930325
WO 9320099	A3	19931125		
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RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9337645	A1	19931108	AU 1993-37645	19930325
PRIORITY APPLN. INFO.:			GB 1992-6757	19920327
			WO 1993-GB614	19930325

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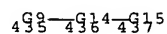


AB Peptide analogs ABC [A = aromatic, azaarom., aromatic amino acid, aralkyl, azaaralkyl, aralkanoyl, azaaralkanoyl; B = amino, aminoalkyl; C = amino] (175 compds.) were prepared. Thus, the threonine derivative I was prepared from D-1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid, Me<sub>3</sub>CO<sub>2</sub>C-Thr(OCH<sub>2</sub>Ph)-OH, and 3-ClC<sub>6</sub>H<sub>4</sub>NCO in 6 steps. I had binding affinities for cholecystokinin A and B receptors of 170 and 20 nM resp. Selective cholecystokinin B receptor antagonists also inhibit pentagastrin-stimulated gastric secretion; the indole derivative II had an ED<sub>50</sub> of 0.20 μmole/kg in rats.

MSTR 1

G1—G8—G16

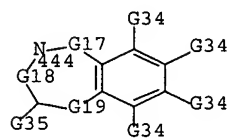
G4 = O  
 G8 = 435-1 437-3



G11 = (1-2) CH2  
 G14 = phenylene (opt. substd.)  
 G15 = 438-436 439-3



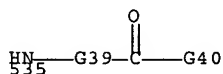
G16 = 444



G17 = (0-4) CH2  
 G18 = (0-2) CH2  
 G19 = (0-3) CH2  
 G35 = 522 / 524 / 527 / 529



G36 = C(O)  
 G38 = 535



G39 = (1-2) CH2  
 G40 = OCH2Ph

Derivative:

Patent location:

Note:

Stereochemistry:

or pharmaceutically acceptable salts

claim 1

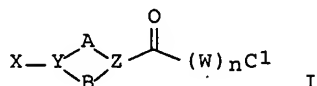
additional ring formation also claimed

379-D,L

U14 ANSWER-5-OF-6 MARPAT COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 118:255342 MARPAT Full-text  
 TITLE: Preparation of N-(heterocyclylcarbonyl)amino acids and  
 analogs as prolyl endopeptidase inhibitors  
 INVENTOR(S): Hosoda, Akihiko; Tanabe, Naoko; Nakayama, Takahide;  
 Sekine, Yasuo; Shibata, Masahiro; Inaba, Jiro;  
 Takasaki, Kazuhiko  
 PATENT ASSIGNEE(S): Fujirebio, Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 59 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
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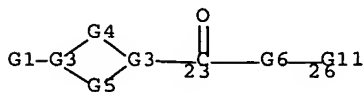
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04334357	A2	19921120	JP 1991-128256	19910502
PRIORITY APPLN. INFO.:			JP 1991-128256	19910502

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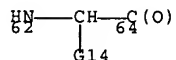
AB The title compds. [I; X = COR<sub>1</sub>, CO<sub>2</sub>R<sub>2</sub>, SO<sub>2</sub>R<sub>3</sub>, CONR<sub>4</sub>R<sub>5</sub>; R<sub>1</sub> - R<sub>5</sub> = H, (aromatic group-substituted). C<sub>1</sub>-15 linear or branched (un)saturated hydrocarbyl, C<sub>5</sub>-10 cyclic saturated hydrocarbyl, aromatic hydrocarbyl, heterocyclyl; Y, Z = CH, N; A = single bond, CH<sub>2</sub>, C<sub>2</sub>-3 polymethylene; B = CH<sub>2</sub>, C<sub>2</sub>-3 polymethylene; W = amino acid residue, DCO; D = C<sub>1</sub>-4 alkylene, alkenylene, C<sub>4</sub>-6 (un)saturated cyclic hydrocarbon group, CR<sub>6</sub>R<sub>7</sub>NR<sub>8</sub>; R<sub>6</sub> - R<sub>8</sub> = H, (aromatic group-substituted) lower alkyl, aromatic hydrocarbyl or CR<sub>6</sub>R<sub>7</sub>NR<sub>8</sub> forms a (S-containing) 4- to 6-membered ring; n = 0, 1; Cl = OR<sub>9</sub>, NR<sub>10</sub>R<sub>11</sub>; R<sub>9</sub> = group cited for R<sub>1</sub> - R<sub>5</sub>; R<sub>10</sub>R<sub>11</sub> = (un)substituted cyclic group], useful for the treatment of amnesia, are prepared. Thus, 3.2 g DL-benzyloxycarbonylpiperidine-2- carboxylic acid (preparation given) and 4.23 g H-Met-OEt p-MeC<sub>6</sub>H<sub>4</sub>SO<sub>3</sub>H salt were condensed in the presence of Et<sub>3</sub>N and DCC in CHCl<sub>3</sub> to give 2.96 g N-(DL-1-benzyloxycarbonylpiperidine-2-carbonyl)-L-methionine Et ester. A total of 119 I were prepared and 44 I in vitro showed IC<sub>50</sub> of 0.00007-13.0 μM against prolyl endopeptidase.

## MSTR 1



G1 = COCH<sub>2</sub>Ph  
 G3 = CH / N

G4 = (0-3) CH2  
 G5 = (1-3) CH2  
 G6 = 62-23 64-26



G11 = OMe  
 Patent location: claim 1

L14 ANSWER 6 OF 6 MARPAT COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 116:236170 MARPAT Full-text  
 TITLE: Preparation of bis(valylaminoethyl)phosphinates as  
           aspartic protease inhibitors  
 INVENTOR(S): Dreyer, Geoffrey Bainbridge  
 PATENT ASSIGNEE(S): SmithKline Beecham Corp., USA  
 SOURCE: PCT Int. Appl., 29 pp.  
           CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

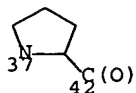
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AU 9181910	A1	19920204	AU 1991-81910	19910703
EP 538374	A1	19930428	EP 1991-913442	19910703
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
JP 05508846	T2	19931209	JP 1991-512312	19910703
PRIORITY APPLN. INFO.:				
			US 1990-549460	19900706
			WO 1991-US4759	19910703

AB Title compds. X1NHCHR1P(O) (OR18)CHR2NHX2 [I; X1, X2 = ABn; n = 0-2; B = amino acid residue chosen from Ala, Asn, Cyst, Trp, Gly, Gln, Ile, Leu, Met, Phe, Pro, Ser, Thr, Tyr, Val, His, or trifluoroaniline; the amino group of B is bonded to A or the carboxy group of the adjacent B and the carboxy group of B is bonded to the amino group of the adjacent B or the structure; A = trityl, H, C1-6 alkyl, R3CO, (substituted) phthaloyl, etc.; R3 = H, (substituted) C1-6 alkyl, (substituted) Ph or -naphthyl, 5-7 membered heterocyclyl such as pyridyl, furyl, benzisoxazolyl; R1, R2 = CH2R12, H, (substituted) C1-6 alkyl, C3-7 cycloalkyl; R12 = NHA, R5(CR6R7)m, R5(CR6R7)mV, NR10R10, etc.; V = O, NH; R5-R7 = Cl, F, (substituted) C1-3 alkyl, OH, (substituted) Ph or -naphthyl, C1-3 alkoxy, etc.; m = 1-3; R5-R7 ≠ Cl, F, OH when adjacent to V; R10 = H, C1-4 alkyl] were prepared as inhibitors of aspartic proteases, especially HIV-1 protease. Thus (+)-Me di(2-phenyl-1-amino)ethylphosphinate . 2HCl (preparation given) was condensed with Z-Val-OH via the mixed anhydride formed from ClCO2CHMeEt to give di-(1R)-I [X1, X2 = Z-Val; R1, R2 = CH2Ph; R18 = Me]. This was demethylated by Me3SiBr to give (R, R)-[2-Val-NHCH(Bzl)]2P(O)OH (II). II had ki (inhibition constant) of 0.0028 for HIV-1 protease inhibition.

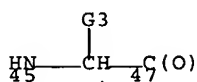
MSTR 2A

280X  
 $G^8 - G^2 - G^6 - G^7$

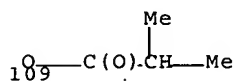
G2 = 37-1 42-13



G6 = 45-12 47-14



G7 = 109



G8 = COCH<sub>2</sub>Ph

Patent location:

claim 12

## INVENTOR SEARCH

10/515,981

September 26, 2006

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L15 571 SEA ("PEARLMAN R"/AU OR "PEARLMAN R A"/AU OR "PEARLMAN R B"/AU  
OR "PEARLMAN R C"/AU OR "PEARLMAN R E"/AU OR "PEARLMAN R  
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"PEARLMAN R S"/AU OR "PEARLMAN RODNEY"/AU)  
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L17 8 DUP REM L16 (5 DUPLICATES REMOVED)

=> d l17 ibib abs 1-8

L17 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 2004:789897 HCAPLUS Full-text

DOCUMENT NUMBER: 141:374650

TITLE: SGS742: the first GABAB receptor antagonist in  
clinical trials

AUTHOR(S): Froestl, Wolfgang; Gallagher, Michela; Jenkins, Helen;  
Madrid, Annette; Melcher, Thorsten; Teichman, Sam;  
Mondadori, Cesare G.; *Pearlman, Rodney*

CORPORATE SOURCE: Novartis Pharma AG, Neuroscience Research, Basel,  
CH-4002, Switz.

SOURCE: Biochemical Pharmacology (2004), 68(8), 1479-1487  
CODEN: BCPCA6; ISSN: 0006-2952

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The GABAB receptor antagonist SGS742 (CGP36742) displays pronounced *cognition* enhancing effects in mice, young and old rats and in Rhesus monkeys in active and passive avoidance paradigms, in an eight-arm radial maze and a Morris water maze and in a social learning task. SGS742 blocks the late inhibitory postsynaptic potential and the paired-pulse inhibition of population spikes recorded from CA1 pyramidal neurons of the hippocampus of rats in vitro and in vivo. SGS742 significantly enhances the release of glutamate, aspartate, glycine and somatostatin in vivo. Chronic administration of SGS742 causes an up-regulation of GABAB receptors in the frontal cortex of rats. Single doses cause a significant enhancement of the mRNA and protein levels of NGF and BDNF in the cortex and hippocampus of rats. The observed antidepressant effects of SGS742 in rats may be explained by these findings. SGS742 was well tolerated in exptl. animals as well as in young and elderly human volunteers with an absolute bioavailability in humans of 44%. In a Phase II double-blind, placebo-controlled study in 110 patients with mild *cognitive* impairment (MCI), oral administration of SGS742 at a dose of 600 mg t.i.d. for 8 wk significantly improved attention, in particular choice reaction time and visual information processing as well as working memory measured as pattern

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recognition speed. A second Phase II clin. trial in 280 Alzheimer's disease patients is underway.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2005:904332 HCAPLUS Full-text  
DOCUMENT NUMBER: 143:222549  
TITLE: GABAB receptor antagonists for the treatment of  
attention disorders  
INVENTOR(S): Madrid, Annette; Jenkins, Helen; Pearlman,  
Rodney  
PATENT ASSIGNEE(S): Saegis Pharmaceuticals, Inc., USA  
SOURCE: U.S. Pat. Appl. Publ., 13 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005187196	A1	20050825	US 2005-64887	20050223
WO 2005082032	A2	20050909	WO 2005-US6005	20050223
WO 2005082032	A3	20060316		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,  
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,  
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,  
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,  
SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,  
RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,  
MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2004-547371P P 20040223

AB The invention provides methods and medicaments for improving attentiveness in humans, including subjects diagnosed with attention disorders. In one aspect, a GABAB receptor antagonist, e.g. 3-aminopropyl-(n-butyl)- phosphinic acid (ABPA), is used to improve attention.

L17 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2003:971842 HCAPLUS Full-text  
DOCUMENT NUMBER: 140:13074  
TITLE: Therapeutic methods for treatment of mild  
cognitive impairment and progression to  
Alzheimer's disease  
INVENTOR(S): Pearlman, Rodney  
PATENT ASSIGNEE(S): Saegis Pharmaceuticals, Inc., USA  
SOURCE: PCT Int. Appl., 16 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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September 26, 2006

WO 2003101391 A2 20031211 -WO 2003-US17161 20030529

WO 2003101391 A3 20040304

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT,  
TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,  
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003231937 A1 20031219 AU 2003-231937 20030529

US 2005233976 A1 20051020 US 2005-515981 20050615

PRIORITY APPLN. INFO.:

US 2002-384754P P 20020529

WO 2003-US17161 W 20030529

OTHER SOURCE(S): MARPAT 140:13074

AB The invention provides methods for treating a symptom of mild *cognitive*  
impairment (MCI) as well as methods for slowing the progression from MCI to  
Alzheimer's disease (AD).

L17 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:736099 HCAPLUS Full-text

DOCUMENT NUMBER: 137:242195

TITLE: Methods for restoring cognitive function  
following systemic stress

INVENTOR(S): Pearlman, Rodney; Tempero, Ken

PATENT ASSIGNEE(S): David Pharmaceuticals, USA

SOURCE: PCT Int. Appl., 49 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002074293	A2	20020926	WO 2002-US8105	20020315
WO 2002074293	A3	20030828		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,  
PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,  
UA, UG, US, UZ, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB,  
GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA,  
GN, GQ, GW, ML, MR, NE, SN, TD, TG

CA 2442717 AA 20020926 CA 2002-2442717 20020315

US 2002187977 A1 20021212 US 2002-99537 20020315

EP 1372620 A2 20040102 EP 2002-713867 20020315

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

JP 2004532200 T2 20041021 JP 2002-573001 20020315

US 2005222093 A1 20051006 US 2005-136272 20050523

PRIORITY APPLN. INFO.:

US 2001-275937P P 20010315

US 2001-293375P P 20010524

US 2002-99537 A1 20020315



WO 2002-US8105 - W 20020315

OTHER SOURCE(S): MARPAT 137:242195

AB The invention provides methods for treating *cognitive* decline associated with systemic stress using a *cognitive* enhancing agent such as a hormone, a herb, an amino acid, a coenzyme, an acetylcholinesterase inhibitor, a muscarinic agonist, an inhibitor of angiotensin-converting enzyme, a centrally-acting calcium channel blocker, or a GABAB antagonist. The *cognitive* enhancing agent is also a derivative of phosphinic acid, a pyrrolo-pyrazino-indole compound, or a peptide. The systemic stress is due to an environmental event, a health problem, a medical treatment, e.g., surgery, or trauma.

L17 ANSWER 5 OF 8

MEDLINE on STN

DUPLICATE 2

ACCESSION NUMBER: 96037509 MEDLINE Full-text

DOCUMENT NUMBER: PubMed ID: 7494750

TITLE: Advance care planning: eliciting patient preferences for life-sustaining treatment. e

AUTHOR: Pearlman R A; Cole W G; Patrick D L; Starks H E; Cain K C

SOURCE: Patient education and counseling, (1995 Sep) Vol. 26, No. 1-3, pp. 353-61. Ref: 65  
Journal code: 8406280. ISSN: 0738-3991.  
Report No.: KIE-55575; NRCBL-20.5.4.

PUB. COUNTRY: Ireland

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
General Review; (REVIEW)

LANGUAGE: English

FILE SEGMENT: Bioethics; Nursing Journals

ENTRY MONTH: 199601

ENTRY DATE: Entered STN: 17 Feb 1996

Last Updated on STN: 18 Mar 2003

Entered Medline: 11 Jan 1996

AB Patient autonomy is a guiding principle in medical decision-making in America. This is challenging when patients become mentally incapacitated and cannot express their preferences. Advance care planning (ACP) addresses this challenge. ACP is a deliberative and communicative process that helps people formulate and communicate preferences for future medical care in the event of mental incapacity. Advance directives are mechanisms for communicating and/or documenting ACP, and are either instructional (e.g. statement of treatment preferences in living wills) or proxy types (e.g. appointment of another person to speak on the patient's behalf). ACP discussions between patients and health care providers and patient-orientated educational ACP materials often ignore insights from 2 related activities, health promotion and human information processing. More effective ACP should occur with greater attention to the concepts of stages of change and self-efficacy, the Health Belief Model, and the necessary requisites for *cognitive* integration.

L17 ANSWER 6 OF 8

MEDLINE on STN

DUPLICATE 3

ACCESSION NUMBER: 94203031 MEDLINE Full-text

DOCUMENT NUMBER: PubMed ID: 8152361

TITLE: Measuring preferences for health states worse than death. e

AUTHOR: Patrick D L; Starks H E; Cain K C; Uhlmann R F; Pearlman R A

CORPORATE SOURCE: Department of Health Services, University of Washington, Seattle 08195.

CONTRACT NUMBER: HS06343 (AHCPR)

SOURCE: Medical decision making : an international journal of the Society for Medical Decision Making, (1994 Jan-Mar) Vol. 14, No. 1, pp. 9-18.

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September 26, 2006

Journal code: 8109073 ISSN: 0272-289X  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: (CLINICAL TRIAL)  
 Journal; Article; (JOURNAL ARTICLE)  
 (RANDOMIZED CONTROLLED TRIAL)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199405  
 ENTRY DATE: Entered STN: 23 May 1994  
 Last Updated on STN: 6 Feb 1998  
 Entered Medline: 6 May 1994

AB Previous research indicates that persons assigning values to ranges of health states consider some states to be worse than death. In a study of decisions regarding life-sustaining treatments, the authors adapted and assessed existing methods for their ability to identify and quantify preferences for health states near to or worse than death in a population of well adults and nursing home residents. The *cognitive* burdens involved in these decisions were also evaluated. Hypothetical health states based on six attributes of functional status were constructed to describe severe constant pain, dementia, and coma. The methods of rank order, category scaling, time tradeoff, and standard gamble were adapted to quantify states worse than death. *Cognitive* burden was assessed using completion rates, interviewer assessments, respondents' self-reporting, and investigators' evaluations. For both respondent groups, all methods showed similar degrees of *cognitive* burden for those able to complete the tasks and were similar in their ability to identify and quantify preferences. The majority of nursing home residents, however, were unable to complete or comprehend the measurement tasks. Most respondents evaluated their current health and severe constant pain as better than death; dementia and coma were more often considered equal to or worse than death. These results indicate that respondents can and do evaluate some health states as worse than death. The authors recommend systematic inclusion of states worse than death to describe a more complete range of preference values and routine assessment of the *cognitive* burdens of assessment techniques to evaluate methodologies.

L17 ANSWER 7 OF 8 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
 ACCESSION NUMBER: 2006:318 BIOSIS Full-text  
 DOCUMENT NUMBER: PREV200600009811  
 TITLE: SGS742, a novel GABA(B) receptor antagonist, improves *cognition* in patients with mild *cognitive* impairment.  
 AUTHOR(S): Tomlinson, J. [Reprint Author]; Cummins, H.; Wendt, J.; Margolin, D.; Pahl, J.; Jenkins, H.; *Pearlman, R.*; Teichman, S.  
 SOURCE: Neurology, (APR 13 2004) Vol. 62, No. 7, Suppl. 5, pp. A128. b  
 Meeting Info.: 56th Annual Meeting of the American-Academy-of-Neurology. San Francisco, CA, USA. April 24 -May 01, 2004. Amer Acad Neurol. CODEN: NEURAI. ISSN: 0028-3878.  
 DOCUMENT TYPE: Conference; (Meeting)  
 Conference; Abstract; (Meeting Abstract)  
 LANGUAGE: English  
 ENTRY DATE: Entered STN: 14 Dec 2005  
 Last Updated on STN: 14 Dec 2005

L17 ANSWER 8 OF 8 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
 ACCESSION NUMBER: 1987:270000 BIOSIS Full-text  
 DOCUMENT NUMBER: PREV198733011896; BR33:11896

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September 26, 2006

TITLE: SIGNIFICANCE OF TYPES OF CEREBELLAR AMYLOID PLAQUES IN  
HUMAN SPONGIFORM ENCEPHALOPATHIES. ⓪  
AUTHOR(S): PEARLMAN R L [Reprint author]; TOWFIGHI J;  
PEZESHKPOUR G H; TENSER R; TUREL A  
CORPORATE SOURCE: HERSHEY, PA, USA  
SOURCE: Neurology, (1987) Vol. 37, No. 3 SUPPL. 1, pp. 370.  
Meeting Info.: 39TH ANNUAL MEETING OF THE AMERICAN ACADEMY  
OF NEUROLOGY, NEW YORK, NEW YORK, USA, APRIL 5-11, 1987.  
NEUROLOGY.  
CODEN: NEURAI. ISSN: 0028-3878.  
DOCUMENT TYPE: Conference; (Meeting)  
FILE SEGMENT: BR  
LANGUAGE: ENGLISH  
ENTRY DATE: Entered STN: 13 Jun 1987  
Last Updated on STN: 13 Jun 1987

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